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I.

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On Amputation. By ANDREW DEWAR, Surgeon, Dunfermline.

My design, in the present paper, is to make a few cursory observations on the comparative merits of amputation by the circular incision, and by the flap.

There are, I conceive, three principal objects, which the operator has in view in the operation of amputation,—to remove the limb with all possible celerity,—to procure union by the first intention,—and to fashion the integuments in such a manner that a good stump may ultimately be formed.

There is certainly some extravagance in the outcry which has been made about the *time* in which operations are performed, as if, forsooth, we are to estimate the merit of an operator by the number of seconds which he occupies in disposing of his operations. The air of consequence, too, and tone of authority, which have been assumed upon this subject, have excited a prejudice, with a considerable proportion of the profession, against all who talk of *time* as being of any essential consequence to the success of an operation. No

prejudice can be more unfounded; for although we should make no account of the mental suffering which the patient must undergo, yet the lengthened torture, to which an individual, already exhausted by illness, has to be subjected, is not merely revolting to every feeling of humanity, but must directly diminish the chance of recovery, in nearly an exact proportion to the length of time which is occupied by the operation. There are instances, and these not few, in which patients have sunk under the shock of a tedious and painful dissection: and I have myself seen more than one case, in which the fatal result was fairly to be attributed to the re-action produced by a protracted operation. On the other hand, operations are tedious, in a great proportion of instances, only from mismanagement; and patients always recover most speedily, (every thing else being equal,) who are the shortest time under the knife of the operator.

Union by the first intention is the wish, I believe, of *almost all operators*, and has justly been regarded as a principal ground of recommendation, in all the modifications of this operation which have been introduced to public notice. I have said *almost all operators*, for it would appear that some of the Continental surgeons introduced pieces of lint between the lips of the wound. But in this country, both our modes of operation and our dressings, are intended to effect the very desirable object of uniting the wound by the first intention.

To the formation of a good stump, all other means ought to be subservient; for if the patient merely recovers, it matters comparatively little whether the operation was dexterously or awkwardly performed,—whether the wound healed by the first intention, or by suppuration, provided he has a good stump, *i. e.* a stump in which the bone is covered by a thick mass of muscle and integument. It is upon such a stump that a great portion of the comfort of his future life depends, at least in as far as regards the repairing the consequence of his misfortune, by the adaptation of an artificial leg.

The operation by the circular, or triple incision, as generally performed, consists in dividing the integuments, down to the fascia, by a circular sweep of the amputating knife,—in dissecting back the skin and cellular substance, more or less, according to the size of the limb,—in cutting the muscles to the bone, while the integuments which have been dissected back, are followed up by an assistant,—in separating the periosteum and fleshy fibres which adhere to the bone, and retracting the soft parts in such a manner as to allow the saw to be appli-

ed as high as possible. When the limb has been removed, and the soft parts drawn down, we have a stump composed of a portion of loose integuments, overhanging a mass of muscular substance, which presents a rough and uneven surface, partly on a level with, and partly retracted higher, than the bone. The soft parts are now placed in contact, and present, certainly, very accurate and even edges, and when retained by stitches, or adhesive plaster, would seem to promise a ready union.

I may here inquire, how far this operation is fitted to fulfil the objects which I have stated the operator ought to have in view. If we recollect the steps of the operation—the circular incision—the dissecting back of the integuments—the folding up of the skin—the deep incision through the muscles—the separating of the periosteum and fleshy fibres which adhere to it—and the sawing of the bone, we must be satisfied that a considerable time will be occupied in the performance. In the instances in which I have amputated in this manner, I confess I have been always dissatisfied with the operation; nor have I ever seen it performed by my friends, nor indeed by any one, in a manner with which I was altogether pleased. It is never a neat operation, nor can it be a humane one, (if I may so speak,) for the length of time which it occupies, and the repeated cuttings, must make it intolerably painful.

I think there is also a frequent disappointment in the healing of the wound. The necessary effect of the operation is to destroy the natural arrangement of the parts which are to form the stump; the skin, dissected off from its connections, is brought over the ragged ends of the muscles, and experience confirms, what we would *a priori* expect, that these parts are not in a condition well fitted for immediate union. The skin too, before the stump is dressed, has a blanched and lifeless appearance, and is indeed in such a state of diminished vitality, as to be, for a time, incapable of the functions of active health. To whatever causes we may attribute it, we find, as matter of fact, that union by the first intention is a rare occurrence after amputation by circular incision. Indeed the condition of the wounded parts, after dressing, renders suppuration, to a less or greater extent, almost a necessary consequence; for no device in dressing can retain, in very exact contact, the loose portions of skin which hang down at the corners of the wound, and they form excellent receptacles, ready made, for the formation and retention of matter.

The most important question however remains, viz. How far is a good stump likely to be formed by this mode of amputation? I suppose it will readily be admitted, that a good stump cannot be formed unless a considerable portion of muscular substance can be saved to cover the bone. We cannot retract the soft parts so effectually, as to make it possible to saw the bone much higher than the edge of the wounded muscles; indeed, it will generally be found, that before the wound is dressed the muscles have retracted themselves to a level with the extremity of the bone; the more superficial ones perhaps higher. It is still possible, however, by pressure and tight bandaging, to bring down the muscles over the bone; but this degree of pressure cannot long be borne; and in a great majority of cases, long before the cure is effected, the muscles have retracted to at least a level with the bone.

There are very few cases of amputation by circular incision, which terminate more favourably than I have now stated. When suppuration takes place to any considerable extent, the case becomes materially worse. The muscles, separated from their natural connections by the operation, and not having as yet contracted new adhesions, continue to retract, until, when the wound is healed, we have a stump of a conical shape, the apex of which is formed by the bone, merely covered by their integuments How very ill fitted such a stump is to bear pressure, it is unnecessary to state.

That the want of muscular substance to cover the bone has been generally experienced by surgeons, is satisfactorily proved by the various means which have been suggested to remedy the deficiency. It has been proposed to increase the quantity of muscle in the stump, by giving an oblique direction upwards to the edge of the knife in dividing the soft parts. It has been also proposed to cut the muscles layer by layer (as if there were regular layers,) and allow the more superficial to retract, before the deeper-seated were divided. Of these plans, however, I do not intend to speak; for although they may perhaps be practicable in the hands of the more gifted of the profession, they are altogether inapplicable to ordinary practice. Nor is it likely that the operation practised by the illustrious Baron Dupuytren (it has the recommendation of simplicity) will soon be adopted in this country, viz. cutting down at once to the bone by a single circular incision.

I have now to consider the operation of amputation by the flap: but before doing so, I cannot refrain from expressing my obligations to Mr. Syme, for his very able paper on Amputation, in the Edinburgh Medical and Surgical Journal for Jan-

uary 1824. Mr. Syme lays no claim to novelty or originality, but he has the merit of having recommended, forcibly and perspicuously, an operation which has been frequently described, but seldom practised; and which, so far as I am entitled to judge from a very limited experience, infinitely surpasses, in all important particulars, the usual method by circular incision. Though I was perfectly familiar with the description of amputation by the flap, as given by surgical authors, yet the facts were never so strongly impressed upon my mind, as to induce me to practise it, until I read the paper to which I have now alluded.

Different modes of performing this operation have been described. Mr. Lizars directs it to be done in the following manner: "The patient being placed on a table, with the leg hanging over, and supported by an assistant, and the roller or pad, with the screw of the tourniquet, placed over the artery, and sufficiently tight to compress the circulation; and the skin being retracted by an assistant, two semielleptical incisions are to be made with a large scalpel through the skin and contiguous muscles, from the patellar to the popliteal aspect, as deep as possible, with their convexities large, and pointing distad, and their extremities meeting patellad and poplitead. A repetition of each incision, boldly made, enables the operator to reach the bone, which is to be cleaned of the adhering muscular fibre; the flaps are then retracted, and the bone sawn, by long gentle sweeps of the saw," &c.

I have practised the operation after this fashion: The patient is laid in the usual posture; one assistant supports the limb, while another compresses, with his thumb, the femoral artery, as it passes out of the pelvis. The operator grasps the whole of the flesh on the outside of the thigh with his left hand, and transfixes it close by the bone with his long knife, and cuts his way out, leaving a flap of the length which he judges to be necessary: the remaining half of the thigh is cut in the same way, from within outwards, into another flap; the knife is then passed round the bone, to divide any muscular fibres which may adhere to it: the flaps are held asunder, and the bone is sawn.

Such is the operation. I may now inquire, how it is calculated to fulfil the intentions of the operator.

This operation is at once simple in the execution, and can be performed in the shortest possible time. It does not occupy, even in the hands of a surgeon possessed of the most ordinary share of dexterity, more than a single minute. It re-

quires indeed, but a very moderate portion of expertness to do it in half that time.

The wound consists of two flaps of equal size and length, and when placed in contact. and retained by stitches or plasters, in a condition very favourable to union. The parts which compose the stump, all retain their natural relations to one another ; the vitality of the skin is in no degree impaired, as its connexion with the muscles, which it covers, is not at all disturbed ; tissues similar in structure and function are brought into contact when the wound is closed, and union by the first intention is not merely a probable, but a general recurrence.

The flaps ought to be made of such a length as to cover the bone, and be brought easily together, without the necessity of any pressure being used. For this purpose, they should be made longer than a surgeon who has never performed the operation would at first sight think necessary. Before the wound is closed, it consists of two long and thick masses of flesh, hanging down over the extremity of the bone: but when the wound is dressed, the bone is hid under a thick covering of flesh—muscle meets with muscle—skin with skin—there is no folding or puckering—every part comes into neat and accurate contact. After retraction, too, has taken place to the uttermost, and the wound is finally united, the bone can be felt thickly covered by a firm cushion of skin and flesh ; and a stump is thus formed, admirably adapted to bear the resistance of a wooden leg.

Four patients requiring amputation presented themselves to me during the last three months ; and as on all of them the flap-operation was performed, I take the liberty of stating the results.

Case I.—A little girl, 6 years of age, was run down by a waggon and had the elbow-joint, the lower part of the humerus, and the soft parts. all crushed to pieces by the wheel. I amputated the arm in the manner I have described above; cut off both ends of the ligatures close by the arteries ; brought the integuments together by four stitches, and retained them in contact by a bandage. The wound was dressed on the second, and on every subsequent day, until the eighth, when it was entirely healed. She was at play on the fourth day. I was extremely gratified with the appearance of the stump; it was far more satisfactory than I had ever previously succeeded in forming.

Case II.—The next case which occurred was that of a girl nine years of age, who had suffered for about five years

from necrosis of the bones of the fore-arm. The elbow-joint had become anchylosed, and the lower half of the humerus affected by the extension of the disease. Her health was failing rapidly. I amputated her arm in the manner described: secured the arteries in the usual way, but left one end of the ligature; united the flaps by four stitches; kept the sides of the wound in contact with a bandage, which was brought down and fastened without touching the wound. There was then pinned on each side of the arm a piece of cloth, torn into slips; a compress was placed over each flap, in such a way as to make it accurately to meet with its fellow, and yet not retain the discharge; and over these the ends of the cloth were knotted, and the pressure increased or diminished at pleasure. The compresses and split-cloths were changed daily, until the thirteenth from the operation, when the wound was entirely healed. The stump was an excellent one.

Case III.—A lad, 17 years of age, had suffered for nine years in consequence of a necrosis of the thigh-bone. He was very much exhausted by the severe pain, and profuse discharge of matter. This lad's leg was amputated by Mr. Syme at my request, on the same day with the arm of the girl whose case was last related; and I was much gratified in witnessing the neatness and propriety with which he executed it. It would have been impossible to have applied a tourniquet in this case, for the bone was sawn immediately under the trochanters. The operation was performed exactly, I believe, as I have described it. The dressing was after the manner stated in case second, in which also it was used at the suggestion of Mr. Syme. The wound was dressed every day until the fourteenth when it was quite healed. The stump is firm and fleshy, and the bone thickly covered by soft parts.

These two patients were walking out of doors, without any restraint, on the third week from the operation.

The next case is an important one, as it proves, I conceive, as far as one case can, the superiority of amputation by the flap, over that by circular incision, in circumstances in which, by the latter operation, a good stump is rarely, if ever, formed, viz. when, from any cause, the wound does not unite by the first intention.

Case IV.—A lad, aged 16, had long suffered from necrosis of the tibia. He was wasted to a shadow. I amputated above the knee, by the double flap. Three arteries were tied. A fourth, which bled, but seemed small, I drew out

with the forceps, as I had often done before, in the hope that, after being elongated, it would retract, and prevent all farther bleeding. The wound was closed by six stitches, and the stump dressed as described in a former case. He complained of no pain after the operation, but he was somewhat restless, and there was an oozing of a bloody serum from the wound for the first five days; the stump was not at all distended, and there was no unusual pain on handling it. On the morning of the sixth day, as there was still a considerable discharge of bloody fluid, I cut out three of the stitches, and found, on separating the integuments, the wound filled with clotted blood. I took out a considerable quantity on that and the two following days, when the stump became perfectly clean, and discharged wholesome matter. He returned home (four miles into the country) on the eighteenth day, perfectly cured. No one could possibly conjecture, from the appearance of the stump, that any untoward circumstance had occurred during the cure. There is no retraction of the soft parts, nor protrusion of the bone. The stump is round and plump, and the bone deeply sunk under a mass of muscle and integument.

It would have been easy to have stated two or three cases of amputation by circular incision, by way of illustration or comparison; but as with these every surgeon is familiar, I consider it to be altogether unnecessary.

The statements and facts which I have now brought forward, may be summed up in the following positions:

1*st*, Amputation, by circular incision, is an operation complicated and tedious in the performance; by the flap, it is simple, and can be performed with great celerity.

2*d*, The wound, in the operation by the flap, is, from its nature, better fitted for union by the first intention, than that which is produced by the circular incision; and, upon trial, this is found to be the case.

3*d*, A good stump is both a more probable and a more common occurrence, by the flap operation, than by the circular incision.

II.

(From the London Medical Repository.)

(*Continued from page* 172.)

*The Art of Detecting Diseases.**

THE THORAX.—Pursuing our observations on this subject, with a view to the plan which may be followed at the bedside, of the sick, (and we wish it to be kept in mind that we purposely avoid, as far as it is at all practicable, to treat of *Prognosis*,) although the circumstance of pain formerly spoken of, especially if it exist in a severe degree, must determine our particular inquiries to the seat of it, whether in the head, chest, abdomen, or extremities; yet, as the seat of pain is not very unfrequently remote from the seat of disease (as in the very common case of severe abdominal pain thoughout the whole course of pulmonary consumption,) and as most painful diseases, wherever situated, more or less affect the respiration, we shall go on to the consideration of the morbid conditions of that great function in this place. Indeed, whilst we are watching the attitude of a sick person, even where pain is a prominent symptom, it must, in the majority of cases, happen, that its effects on respiration, as well as the effect of the respiration on the pain, are simultaneously noticed. In diseases of the lungs, or within the thorax, a state of breathing different from the natural state is almost always striking; and where dyspnœa has supervened on diseases of parts remote from the thorax, it may be said to be always alarming.

A peculiar form of the chest, inasmuch as it may dispose to pulmonary disease, becomes a source of information to us; and we learn some particulars with respect to female patients by the development of the bosom; and are occasional-

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* An Essay on the Symptoms and History of Diseases, considered chiefly in their Relation to Diagnosis. By Marshall Hall, M. D., F. R. S. E. 1822.

Symptomatology; or the Art of Detecting Diseases. By Alexander P. Buchan, M. D., F. L. S. 1824.

Novus Thesaurus Semiotices Pathologicœ, quem collegit atque edidit Maur. Hasper, Med. Chir. atq. Philos. Doctor. 1825.

Manuel de Clinique, ou des Methodes d' Exploration en Medecine, et des Signes Diagnostiques des maladies. Par L. Martinet. 1825.

Semeiologie Generale, ou Traite des Signes et de leur Valeur dans lse Maladies. Par F. J. Double. 5 tom. 1811—1825.

ly directed to spinal malformation by the unequal size of the mammæ, or the undue protrusion of one shoulder. Very slight habits of attention are sufficient to give us this kind of prefatory insight into the state of patients; and thus we soon learn to consider a man with a short neck and a red or purple face as in danger of apoplexy, and to look upon an unwieldy abdomen as a fruit of long habits of indulgence at table, or on a carbuncled face as a reflection of past conviviality, insomuch as to excite our suspicions concerning some disorders of the stomach, liver, and other organs of digestion. The only danger consists in our considering these outward appearances the absolute signs of specific affections, and, consequently, our being led to assume the existence of such affections on insufficient and uncertain proof.

In aid, then, of our examination into the general state of the thorax, we have the benefit of observation of its form and motions, of the degree and peculiarities of the latter, as conveyed to us by mediate auscultation and mensuration of the chest; and to these we may add the important help of percussion. M. Double farther insists, that external heat will be found to indicate the seat of the disease, not only generally, according to the observation of Hippocrates, 'quacorporis parte calor inest aut frigus, ibi. morbus est,' but locally and particularly.

'The external point of this cavity, where the heat is greatest, indicates,' he says, 'some injury of the internal part which corresponds to it. Avicenna advised this experiment should be tried, to ascertain on which side effusion had taken place in empyema: that a wet cloth should be placed upon the chest, and where it became dry the soonest, there, he said, was the disease, and the empyema would be found on the same side.'

Whatever other appearances of danger there may be, scarcely any violent disease will be found to exist in the three great cavities, as they are called, if the patient's respiration remains tranquil, and his voice firm and natural. Dyspnœa coming on in the course of inflammatory disorders not immediately concerned in respiration, as in enteritis, is an unerring sign of the dangerous increase of the malady; and the respiration remaining undisturbed, is sometimes the only good symptom when yet the patients recover. The author just quoted says, that, the respiration remaining natural, he has frequently seen patients recover from putrid and malignant fevers, after he had pronounced sentence of death upon them on account of their exhibiting the Hippocratic countenance.

floccitation, and loss of pulse. At every step of this inquiry, however, we are reminded of its futility, as far as relates to separate symptoms; and we cannot too often repeat our sense of it, or too strongly warn the student never to throw off the weight of his care on account of espying any *single* symptom, or to trust in any *one* as a safe guide in the labyrinths of inward diseases. After every observation which, out of the mighty mass of collections made by others, or out of our own experience, we think ourselves justified in making some allusion to, we feel disposed to repeat what has been, by some writers especially, said of some of them only—*cæteris consentientibus*. Exceptions occur to the mind, as soon as any symptomological axiom becomes the subject of thought. Every reader of experience will be able, no doubt, to recollect cases in which the respiration was laborious, the voice diminished and puerile, and the general appearance of the patient that of distress, and yet in which there was no pulmonary affection, or, indeed, serious disease of any kind:—we speak of some forms of hysteria; but in these, the state of the tongue, of the skin, of the pulse, and, perhaps, the visible perturbation of the mind, or some or all of these circumstances, assist us in forming a correct judgment. On the other hand, examples of severe, spreading, fatal disease of the lungs—examples more insidious, and infinitely embarrassing, are sometimes met with, in which the whole substance of the lungs gradually becomes unfit for the purposes of respiration, almost without any warning symptoms either of the precise seat or extent of the danger, until death is actually at the gate.

In general, we find a febrile state of the system accompanied with a quickened respiration; and when there is inflammation as well as fever we often remark an instructive transference of action, by which the labour of breathing is avoided by the part diseased, and thrown on such parts as are better able to bear it. Thus, in inflammations within the chest, we see the abdominal muscles called into unusual action, and the parietes of the thorax comparatively tranquil; and when parts within the abdomen are inflamed, we find the muscles of the abdomen kept still, and the thoracic muscles labouring.

'By an attentive observation of the modifications of the respiration, inflammation of the pleura is distinguished from inflammation of the peritonæum covering the liver, &c. Inflammatory pain within the abdomen is, in the same manner, distinguished from spasm or colic, in which there is a

state of breathing altogether *incompatible* with inflammation attended with acute pain and tenderness.'

Sometimes all the parts which can by any means be brought to take a part in carrying on respiration are exerted together, with evident and painful effort, for the purpose of overcoming or remedying some terrible obstacle to easy breathing either in or about the lungs themselves—a state which affords little hope.

Slowness of the respiration indicates oppression of the brain, as in apoplexy, or after severe injuries of the head, or in cases of poisoning by laudanum; and in some examples of paralysis, in which the respiration has been said to resemble a succession of sighs. Frequent interruptions, occasionally renewed efforts, long intervals between the act of expiration and the next inspiration, with an increasing sonorousness, tell us that disease has gone too far to be checked, and mark the departure of life from the body.

Even when there is little or no ordinary impediment to the act of breathing when the patient is undisturbed, we sometimes require him to take a deep inspiration, or to rise up suddenly, and gather information from the effect thus produced. When a full deep, inspiration can be taken, without exciting either pain or cough, we generally consider the lungs to be sound, and that there is no acute inflammation within the chest, or in the portion of the abdomen in the vicinity of the diaphragm: but we are not hastily to assume the converse of this, or to forget that a full inspiration may be impeded by pains which are merely muscular. Dr. Hall considers the effect of a deep *expiration* still more important, and has occasionally gained information from other actions of the respiratory organs. He observes—

'In some instances of *chronic inflammation of the larynx or trachea*, I have observed that the patient is incapable of performing the action of snuffing up the nostrils, so as to draw in the alæ nasi; this was not observed in some cases of *ulcer of the larynx*. The remark may not only lead us to determine the *degree*, but the *diagnosis*, of the morbid effects of *laryngitis*.'

An increased frequency of respiration is often one of the earliest tokens of a phthisical habit; 'an effort is *early* visible in the respiration, and its effects seen in a movement of the alæ nasi.' The quickness of breathing is only an accompaniment of another constant symptom of phthisis, a quick pulse. A sudden dyspnœa sometimes occurs in dyspeptic patients, in which a sense of weight is felt at the sternum, and

the respirations are increased in frequency; Dr. Hall looks upon this as a commencement of asthma. When the respiration, which was tranquil whilst the patient refrained from motion, becomes hurried, anxious, and difficult as soon as he moves, we have to fear effusion into the chest, or some organic disease of the lungs, heart, or large thoracic vessels.

In cases of pneumonia terminating in *sphacelus*, M. Double says he has seen the character of the respiration suddenly altered, from painful and difficult to perfectly easy, not long before death. We may observe, however, that Laennec, who scarcely considers gangrene of the lungs one of the terminations of inflammation, but looks upon the degree of inflammation subsisting as rather an effect than a cause, does not appear to have noticed the peculiar change of symptoms alluded to by M. Double; and in some of the cases related by him, the respiration was even not much affected until a few days before death.

Connected with respiration, we have attended to the character of the cough, when any is present, and to that of the expectoration. We shall not attempt to describe the peculiar sounds of different kinds of cough, which become with the experienced practitioner indications of the cause from which they proceed; they are, indeed, to be considered as more relating to prognosis than to the distinction of diseases, although the violence of cough, the facility or pain with which expectoration follows it, and the effort made to repress it, are often serviceable to us, and the latter circumstance is in a particular manner instructive in the pneumonia of children or infants; because it indicates a degree of pain that in all probability arises from an inflamed state of the pleura. Cough may exist without disease of the lungs; it may be occasioned by a temporary plethora, in the absence or in the suppression of habitual discharges, by distant irritations, as from worms, or substances within the ear, sometimes from an unexplained sympathy with the stomach, and sometimes, perhaps, from mere debility; but in all these cases the lungs may eventually become really diseased, so that the duration as well as the kind of cough is to be inquired into. From the expectoration, we learn the nature of serious and doubtful pulmonary diseases; and we are greatly assisted by it in our diagnosis between some cases of peripneumony and bronchitis, and cases of true phthisis pulmonalis, as the excretion of tenacious, adhesive matter in the former differs very strikingly from the frothy, aqueous, unadhesive expectoration of phthisis, even when the

latter is mixed with detached nuclei of thicker matter, and presents no purulent character. Copious and tenacious expectoration may be a result of mere gastric irritation: in some individuals this is a very troublesome consequence of recent excess in wine or spirits; and it appears to be in this way that relief is afforded by expectorant medicines. The expectoration of blood always gives the patient some alarm, but it may be expectorated in small quantities without danger: when a considerable quantity is suddenly brought up without effort, the case is much more serions, at least, where, by the inspection of it, we are assured it comes from the lungs. It now and then happens, that in persons who have an habitual determination to the head, a natural attempt at relief is made by the rupture of a vessel at the back of the nostrils; the blood is swallowed, and after some time vomited in a coagulated state: if the case is also complicated with hæmoptysis, we may easily be deceived in our diagnosis. In pleurisy, asthma, and pneumonia, a slight expectoration of blood has long been considered rather a favourable symptom. M. Double says—

'I have known cases in which there was bloody expectoration and even actual hæmoptysis, where, from the whole history of the patient, and the whole progress of the complaint, and examination after death, these symptoms were demonstrated to arise from irritation of the bladder, and to be produced sympathetically.'

Expectoration is not an essential symptom of phthisis. That fatal disorder is also often so far advanced as to make death certain before any expectoration takes place, and this again is occasionally suppressed for some time previous to dissolution. We are enabled to explain some of these circumstances if we admit the justnesss of Dr. Duncan's division of this malady into the catarrhal, apostematous, and tubercular; the two latter being frequently only attended with expectoration, when their progress has already been considerable; whilst in the first of the three an expectoration of mucus or of pus, or a mixture of both, exists from the beginning. It was propably both to the tubercular and apostematous kinds that Hippocrates alluded, when he said, 'post sanguinis sputum, puris sputum malum,' purulent excretion being, of course, a symptom of the most advanced stage of both these forms. It is now well known that purulent expectoration may exist without phthisis; and it should be remembered, that in dangerous inflammation of the pleura, and even of the lungs, the cough may be dry. The length of time that an

expectoration has lasted may sometimes help our diagnosis, as between simple but severe catarrh, and catarrhal phthisis. The black matter noticed by Landre-Beauvais, as occurring in the expectoration of some individuals, would appear to be the *black pulmonary matter* of Laennec, secreted in the bronchial glands, and increased by different irritations in the lungs: this is not to be confounded with *melanosis*, in which, although the black and broken down fragments are sometimes seen in the expectoration, this circumstance is of rare occurrence.

Those who are attentive to the sound of their own voice are able to note almost daily variations in its tone consequent on accidental circumstances of air, diet, and the state of the health, and in a more marked degree on unavoidable fatigues or occasional imprudencies; and on this principle we are enabled, if we know the natural sound of a patient's voice, to ascertain how far his strength has sunk under the influence of disease; and so far the voice is of use as a symptom. We find the voice generally weakened and depressed in acute diseases; and it often acquires a querulous character from long-continued suffering. The exaggerations of patients who feign severe acute disorders may often be detected by these circumstances; for they can easily imitate the lamentable tone of chronic invalids, but are less skilful in concealing the undiminished force of their speech.

'The voice,' says Dr. Hall, 'is also modified in some cases of *typhus fever*, *cholera morbus*, and *dysentery*, in which it is apt to become feeble and *husky;* in *phthisis* and *diseases of the larynx and trachea*, in which it frequently becomes extremely *hoarse;* and in *hysteria*, in which it is often suddenly and long *lost* and inaudible.'

Sometimes a material change in the tone of the voice is the effect of a bronchocele, in which case the cause is visible enough; but it is said also to be caused by an enlarged heart, or by an aneurism of the aorta. An observation of more importance occurs in M. Double's work, quoted apparently from M. Rampont, *De la Voix et de la Parole*:—

'The voice is constantly altered in tetanus: it is whistling and falsetto. It is often only necessary to cause the wounded to speak, in order to discover that they are menaced with this affection, so much does it affect the voice from its very commencement, and even when it is merely threatened. In some tetanic patients the voice is no longer to be recognised; it is elevated three or four notes, often an octave, or at least a

fifth; and it is seldom afterwards, even when the disorder is removed, restored to its natural character.'

The circumstance here so strongly stated has not, it would appear, excited general attention: modern writers do not notice it. Aretæus had perhaps observed it, for he describes the voice of patients in tetanus as plaintive, and accompanied with deep sighing. It has generally escaped our own observation.*

We have noticed very profound huskiness of long continuance, apparently depending on the generation of worms in the intestines. There is without doubt a very peculiar modification of the voice in most cases of mania, and we think we have been able to foresee paroxysms of violence by the help of this observation better than by any other. In some lunatics it acquires amazing power, and in others becomes capable of wonderful variety of modulation, so that a listener would feel quite sure that he heard a conversation between two or more mad people of different sexes, rather, than the ravings of one. The slighter accessions of delirium are, for the most part, first discernible in an accelerated speech, and a lively disposition to talk. Loss of voice and difficult articulation are occasionally dependent on determination to the head, and should be looked upon as warnings not to be despised.

Fætor of the breath, sneezing, hiccough, and any other modifications of respiration, whatever may be their real or imaginary value as omens of good or bad import, tend so little to facilitate the distinction of diseases, that we think it quite unnecessary to speak of them.

The examination of the thorax comprehends an attention to the action of the heart, including the diffusion of the sensation conveyed to the hand, the measure of its force, its regularity, and the rhythm of its auricular and ventricular contractions. Serious derangement of the respiratory organs seldom exists long without some embarrassment or disturbance of those concerned in the circulation of the blood. Any considerable disease of the heart may generally be recognised without much difficulty by the eye and hand alone,

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* Upon referring, however, to the notes of two cases of tetanus, wherein the progress of the disease was carefully watched by us, we find it noted, in one of them, that the voice was considerably changed the first day on which we saw the patient. He then complained only of pain and constriction under the sternum and in the throat, and was able to walk to our house for advice. The other characteristic symptoms of tetanus were not present until the following day.

extending our notice to the arteries and veins of the neck, and they may be distinguished with singular accuracy by means of the stethoscope. Yet we have known an immense aneurism of the thoracic aorta the subject of doubt and even of lively disputes, which were only put an end to by examination after death. Of mediate auscultation we must say no more in this place, than that we believe it to be impossible by any other means to obtain decisive information concerning many diseases of the chest. We should be doing great disservice to the student if we led him to believe that he could gain a perfect mastery over that instrument by any other method than daily use of it, combined with attentive study of M. Laennec's Treatise on Diseases of the Chest, of which so faithful, and, at the same time, so spirited a translation has been made into English by Dr. Forbes. The useful little manual of M. Martinet contains a concise but correct description of the manner in which diseases of the chest may be explored by the stethoscope, mensuration, percussion, &c.; and as we have great reason to believe that even the simplest and easiest of these, percussion, although it is unquestionably of great utility, is very little resorted to, and, when employed, is apparently very imperfectly understood: we shall insert M. Martinet's brief instructions relating to it:—

'If we wish to examine the anterior part of the chest by the method of percussion, the patient must be in a sitting posture, his arms being directed backwards. If we wish to ascertain the state of the lateral regions, the patient's arms must be raised above his head: and if we wish to examine the back, the arms must be carried forward and the body slightly bent. We then proceed to the employment of percussion in the following manner:—The thorax is to be struck perpendicularly with the (ends of the) united fingers, the integuments being previously tightened on the opposite side by the other hand: we are then alternately to strike corresponding points on each side of the chest, with the same degree of force and at the same angle of incidence; and to avoid exciting pain, the hand must not be held stiffly.'

The information to be thus derived depends upon the capacity of the healthy chest to return a clear sound when thus struck, the sound being, of course, less clear where the muscles are thickest, or where there is a thick covering of fat, as well as at the lower portion of the right side of the chest, which is usually somewhat encroached upon by the liver. This sound becomes obscure in several diseases of the lungs,

and is lost when there is an effusion of fluid between the lungs and the hand. Further into this subject we cannot go with propriety, but must refer the reader to Avenbrugger's treatise, which has been translated into French, with copious notes, by Corvisart; both having been recently published in English by the translator of Laennec.

As we naturally compare the action of the heart with that of the pulse, and draw material conclusions from their agreement or disagreement, as well as from the proportionate frequency of the pulse and the respiration, this seems to be the properest opportunity for making a few observations on the pulse, regarded as a diagnostic. And here we must repeat an observation already made by us, that, without denying that the pulse is valuable as a symptom when taken along with others, it is often, we could almost say generally, fallacious when taken alone. The great and almost exclusive credit attached to the pulse by many practitioners, makes us glad to shelter this scepticism under the authority of M. Double, not that we ourselves want his authority for a fact daily confirmed at the bed-side, but because some may be influenced by his opinion who would consider our simple assertion as hasty and inconsiderate.

'In reading the following corollaries on the significations of the pulse, says the able author just mentioned, when beginning to treat of this division of his subject, 'as well as in making a clinical application of them, it must not be forgotten that the conclusions to be drawn from this part of symptomatology are very uncertain, and that here, more than in any other branch of the subject, it is necessary to compare the signs deduced from the pulse with the collective evidence of all the symptoms of the disease.'

In some of the most important inflammations, and in some of the most violent disorders to which the human frame is liable, we have great authority for stating that very little practical advantage is to be derived from the nature of the pulse: Galen made this observation in pestilence; Sydenham verified it in fevers; Pemberton applies it generally to acute inflammatory diseases; numerous authors have so expressed themselves of phrenitis; and almost all who have treated of tetanus. Even in phthisis, in which frequency of pulse is often regarded as decisive of the nature of the complaint, and, perhaps, in conjunction with two or three more circumstances, is really so, we are exposed to some uncertainty by the same symptom being often, temporarily at least, a feature of bronchitis. We do not deny that some persons are gifted

with so fine a sense of touch as to be able to discriminate shades of difference in the character of the arterial pulsations, where others would perceive no distinction. Dr. Rush appears to have been very eminent in this particular; and we remember reading a remark in some of his writings, that he always found his power of discriminating pulses greatest, and the delicacy of his sense of touch most perfect, when he led a life of rigid abstinence. Yet there is seldom much advantage derived from this individual excellence, on account of the conflicting testimony given by those asserting for themselves equal accuracy of sense, and on account of the unsettled meaning of the terms in which the results are usually expressed; an inconvenience which, unless the wish of Galen could be accomplished, and ideas conveyed from mind to mind without the encumbrance of words, is likely to be of some duration. As regards the absolute frequency of the pulse, it is in innumerable instances a circumstance not deserving of exclusive consideration: there are individuals whose pulse is *always* hurried when it is felt; there are others who have a pulse when in health invariably above 100; and many in whom it does not exceed 60: we are acquainted with a gentleman whose pulse sunk gradually, and with much agitation, about his sixty-third year, from 80, which had been its usual standard, to 30, where it remains at this day, slow, regular, full, and even *hard*, without any known organic disease of the heart, or any apparent functional disturbance. With all these drawbacks, however, the comparative frequency of the pulse in the same person in sickness and in health is a symptom that should not be passed over; but we should not be so much engrossed in the mere circumstance of the *number* of the pulse, as to neglect what is of much more importance in almost all cases, its *nature*. It cannot be denied, that the custom of noting the minutest variations in the number of the pulse has a tendency to produce this kind of neglect, and that it is scarcely less futile to criticise the arteries, than to criticise a soliloquy, by the *stop-watch*.

Very far are we, at the same time, from being able to assent to Dr. Buchan's remarks on the importance of the character of the pulse: and we should, at the very outset, be led to question its certainty and value as a diagnostic aid by his own remark, that the ancients, though ignorant of the circulation of the blood, and unacquainted with the nature of the pulsations they felt in the chest, or of the vessel they compressed with the finger, drew equally accurate deductions from the pulse with ourselves; a remark which, however, is not to be taken

without limitation. Hippocrates notices the pulse much less particularly than it is to be supposed he would have done if it had been an intelligible phenomenon to him; the opinion expressed of it by Celsus was alluded to in a former part of this review; Galen, who wrote voluminously on every thing, was certainly voluminous on this, and, drawing largely upon his brilliant imagination, came to be considered the creator of the medical doctrine of the pulse. Another suspicious circumstance is, that the Chinese, it seems, go far beyond all other nations in their pretensions on this subject. Of the four different kinds into which they divide the pulse, the *superficial*, the *profound*, the *quick* and the *slow*, the first and the second are not very intelligible, and the third and fourth are often, as we have said, mere accidents. The connexion of these with the supposed temperaments, the choleric, the sanguine, the phlegmatic, and the melancholy, is as imaginary as the temperaments themselves are ill defined and ill understood; though Dr. Buchan seems inclined to take this venerable doctrine under his patronage, as well as the Chinese feelers of the pulse. What definitions, indeed, can be clear and satisfactory which are founded on hypothetical opinions, involving an unnatural limitation of the diversities of human constitutions —diversities as infinite as those of the mind and character— under *four* descriptions!

But to return to the Chinese. Nobody who knows any thing of that mystifying and dishonest nation will feel any surprise at the imposing directions of their doctors on the subject of feeling the pulse: there is, however, a story inserted in a note to the passage describing these mysteries, which appears to us to be not undeserving of some examination:—

'In Barrow's scientific account of the Chinese embassy, there is a relation of a medical gentleman attached to the corps, who, being affected with chronic diarrhœa, determined to put the skill of the native doctors to the test in his own person. Having sent for a professor of the healing art, he put his hand out of bed, and requested to be informed what was his complaint. After a minute and attentive consideration of the pulse in various parts of the body, conducted in profound silence, and accompanied with all professional solemnity, the doctor declared to him the nature of the disease. Then taking from one of the loculi of his medical chest, which always accompanies the doctor, carried by a servant, a small quantity of powder, tendered it to him as a remedy. The English surgeon, whose faith was strengthened by the truth

of the prognostic, swallowed the drug, and speedily recovered.'

Now, without any disposition to be heretical in medicine, we really have not faith sufficient to bear, as above, the suspicion that the worthy surgeon was, in his state of sickness, the dupe of the grossest delusion. Granting that the Chinese practitioner was a man of great experience and penetration, which of course, he might be, it is not difficult to imagine several sources from which he could not help gaining information during the performance of this solemn pantomime; or to imagine means by which the history of the case might very properly be completed. For a full belief of the story as a tale of wonder, for which it is told, we must forget that the native doctor could learn any thing from the sick surgeon's countenance, from his voice, from his attitude, from his respiration, from the temperature, state of the skin, and sensibility of different parts of the body;—from all which he would be gaining information during his hyper-diligent exploration of the pulse; and, even then, we leave out what was, in all probability, the principal source of his certainty—the servant who was sent to fetch him. Such a story would not be worth refuting if stories of the like kind, and inconsiderate boasts concerning the wonders of the pulse, had not often led young students to waste some valuable time, and to rely more on that one symptom than was either instructive to themselves or serviceable to their patients. In the great difficulty of laying down general rules that may be followed with safety, it is something to abrogate those which are fallacious.

As for the organic pulse, indicative of a crisis, the *pulsus myuris*, or creeping pulse, 'tapering away under the fingers like the tail of a rat; and all the varieties depicted in the Semiotice Pathologica of Gruner—that is to say, the cephalicus, the pectoralis, the *nasalis*, the uterinus, the splenicus, and half a dozen others, of which, no language being equal to express them, Dr. B. has obligingly given *a plate*,—we fairly confess our utter ignorance of any thing about them. We do not dispute that Gruner, and Mercatus, and Solano, and De Bordeu, and many others who might be named, knew what they meant themselves, or rather, had peculiar and distinct ideas attached to the inadequate terms they were under the necessity of employing, but we are quite sure that nobody else was ever able to understand them, and they were not able to understand one another, and that their peculiar ideas, however distinct they might be in the individual minds which conceived them, have always been, like lost memoranda, 'of

no use to any body but the owner.' All practitioners have made their own observations on the pulse; but here, even more remarkably than in any other division of this subject, we find that the products of one man's senses are not available to another: a glance at the strange *picture* of pulses appended to Dr. Buchan's work will shew every physician varieties which he never met with, and omissions, we are inclined to think, of some that he occasionally notices. On the whole, we cannot withhold our astonishment at finding a book, published in London in 1824, and addressed to students, in which the puerilities and fantasies of dreaming men, which have for years been in the quiet grave of oblivion, are exhumed, revived, and produced, as worthy of serious attention.

Passing over these refinements, then, as only calculated to 'puzzle the young, and be of no use to the old;' keeping in mind the slight circumstances of diet, temperature, time, position, medicine, and mental emotion, which may have affected the circulation before our visit; remembering, also, that the pulse is not confined to the radial artery; we may proceed to consider its real value as an indication of different diseases. Dr. Hall has very judiciously confined his remarks to such varieties of the pulse as are of practical importance. He observes, that it is generally much more frequent in the early periods of idiopathic fever than of symptomatic fevers; that it is unnaturally slow in idiopathic fever with congestion of the brain, and quicker where idiopathic fever is complicated with inflammatory affections. The following remarks may be of use to those, if any there be who answer to the description, who make *frequency* of pulse the measure of depletion; and we may add to them, that in chronic affections of the uterus, and perhaps of other organs, it is necessary for the practitioner to be prepared for an appearance of increased strength of pulse, as well as frequency; for if he endeavours to counteract these states by what is commonly called bold practice, he will reduce his patient, but not the disease.

'The pulse is generally more frequent as the disease is more advanced, unless its violence has been subdued;—the peculiarities in the cases of *phrenitis* and *enteritis* have been already noticed. In the later stages of inflammatory diseases, the pulse is also apt to become, or to remain, unnaturally frequent, as an effect of the *loss of blood* from repeated venesection: it is, therefore, important to observe

ev ery symptom, not to be misled by a continued frequency of pulse.

'It is not unusual to observe, that, in various diseases, the frequency of the pulse remains, when the morbid actions have apparently subsided; in such a case it is necessary to continue our attention, and watch and wait for the diminution of the frequency of the pulse, and, if this event does not take place in a moderate space of time, to ascertain whether the disease be in fact subsided, or only mitigated, and pursuing its course in an insiduous form. This watching is particularly necessary in cases of *pleuritis* and *peritonitis*.'

The instance of fever might have been added here in which frequency of pulse will often remain for a week or two after every other symptom has subsided; and during the presence of which peculiarity it has been observed, and we think justly, that slight circumstances will produce a relapse. There are cases, however, in which, during convalescence from fever, the pulse is morbidly slow. An intermitting pulse, in the beginning of fever, is stated by Dr. Fordyce to be a very bad symptom: it is one which excites uneasiness in the mind of the practitioner in any stage of the complaint. It is in obscure organic diseases that our suspicion is roused by permanent frequency of the pulse, as in phthisis, and chronic affections of the uterus and other organs; although the liver and ovaria are noticed by Dr. Hall as exceptions to this rule. This frequency has been thought seldom to exist before some degree of diurnal febrile excitement is observable, but is, in fact, often perceived before the hectic stages are fully developed. We sometimes observe a patient's constitution giving way in consequence of former intemperance, before a very advanced age; the stomach and bowels losing their power, emaciation proceeding, but the pulse neither feeble nor frequent: as if in these cases a good constitution had been only partially destroyed; and the abdominal viscera were for the most part ruined, whilst the heart remained sound. The importance of feeling the pulse after the patient has recovered from the slight hurry attendant on first seeing the medical practitioner, a precept which has been a thousand times repeated after Celsus, but never in more elegant language, is very obvious; by feeling the pulse twice or thrice during the visit, we often learn how singularly its first state differs from that which succeeds when the nervous emotion has died away. M. Martinet gives very minute directions relating to this particular: the arm of the patient being placed in extension, and the fore-arm pronated, so as to rest on the cubital

edge with the radial border a little elevated, the practitioner is to feel the pulse with the hand opposite to that of the patient.

'The four last fingers are to be placed in a parallel direction, on the same line, all bearing on the radial artery; the index being next the wrist; whilst the thumb is applied to the dorsal face of the hand, and furnishes a *point d'appui* to the other fingers. The first impulse of the blood is to be received by the little finger, which rests lightly on the vessel, the others compressing it more or less strongly at the same time. This should be continued for a minute or two, and both arms should be carefully examined.

M. Double, who is even more particular, is also a little satirical on the physicians of his country, who place 'one or two fingers negligently on the artery, whilst the rest are gracefully elevated or at least affectedly, either to shew a beautiful hand, or the splendid rings with which the fingers are ridiculously loaded.' The ancients used to place the hand on the region of the heart: M Martinet advises the application of the stethoscope over the aorta and the crural arteries; and it is unquestionably often expedient to ascertain the state of the circulation at the ancles, as well as at the wrists. An irregular pulse, which may escape notice until after ten, twenty, or more beats, and which is often a sign of serious organic disease of the heart, and not an uncommon attendant on a chronic complaint in the liver, is often a mere idiosyncrasy, connected with a state of health in some individuals, and supervening on the slightest deviations from health in others: it is, in many instances, the consequence of causes of a temporary kind, as pregnancy, worms, acidity in the stomach; so that this symptom, like the rest, is of very little service by itself. A small and irregular pulse, the action of the heart being at the same time violent or laborious, is almost always a sign of valvular disease of the heart. Weak action of the heart may indicate thinness of its walls with debility, or accumulation of serum in the pericardium; and a strong diffused action, with a strong pulse, may be produced by an enlargement of the heart with thickening of its walls; but if we would form an exact opinion of these cases, and ascertain all the varieties of disease that may occur in the auricles and ventricles of the heart, we must diligently employ the stethoscope. When the pulse of one arm is stronger than that of the other, there probably exists some cause of obstruction between the radial artery and the heart, as an aneurismal tumour, &c., and thus diseases have been feigned by tying a

ligature round the upper part of the arm. The same effect may be produced by partial paralysis. M. Double thinks that inflammation of either side of the chest produces a corresponding increase in the strength of the pulse on that side. With the *dicrotic* pulse, or what the French call *martele*, and which is said to indicate hæmorrhages, we cannot say that we have much acquaintance. After repeated attacks of hæmorrhage, it is not, we think, very rare to find the pulse bounding, and feeling as if enlarged, the patient at the same time requiring, and being benefitted by, a stimulant or tonic treatment Dr. Hall observes, that 'the most extraordinary degree of palpitation, and of pulsation in the carotids, and even of the abdominal aorta, is observed in some cases of *exhaustion from reiterated loss of blood*;' here it is evident, that too great a deference to the deceptious strength of the pulse would be fatal to the sick person.

Thus, although the evidence to be drawn from the pulse, when *compared with that of other circumstances*, becomes of first-rate importance, we see how little exclusive information is to be obtained even from so pervading and palpable a symptom as arterial action ; one, the peculiarities of which have been so long and so diligently watched, so largely treated of, so much relied upon ; and the ordinary characters of which are universally supposed to convey continual and peculiar information to the practitioner : we see, that, in reality, the information to be obtained from this fabled fountain of diagnosis is nearly limited to the indication of general strength or debility, and that only in the absence of some acute and of some chronic diseases ; and that almost every attempt to deduce general rules concerning it is unfortunate. There can be no doubt, for example, that the following, laid down by Dr. Buchan is of this description :—'If the beating of the artery imparts a sensation similar to that of an elastic cord twitched under the fingers, whether slow or quick, the quantity of circulating blood may always be artificially diminished with safety and advantage.' And M. Double, after venturing at least to say that frequency of pulse is especially connected with the febrile state, has this curious, and perhaps inadvertent observation :—'Of all the semeiological conclusions to be derived from this state of the pulse, this is perhaps the most important : *it is, however, vague, and full of uncertainty.*' Yet we are inclined to venture thus far into general observation on this matter, and to say, that a feeble pulse in acute diseases, or a strong pulse in chronic affections, is a symptom of an anfavourable nature ; that a rapid pulse can

never be a good symptom and that a small and rapid pulse is always a bad one. We fear it would be less difficult to discover exceptions to these rules than to add to their number. There is one other rule relating to the pulse, however, which we think is invariable, and of great importance; we mean that laid down by some writers on the subject of midwifery, that if the pulse remains upwards of 100 for twelve hours after delivery, there is some danger to be apprehended.

It is our duty to acquaint the reader, that we find, in Dr. Hasper's Thesaurus, a thesis published at Leyden by a Dr. Thyssen (Thyssenius,) De Pulsus Doctrina, in which one hundred and fourteen pages of small print are expended in the enumeration of all the observations and fancies of the ancients and moderns. The probable and the improbable, the useful and the useless, the good, bad, and indifferent, the true and the untrue, are collated in this work with surprising labour, and as surprising a want of discrimination. This kind of performance, than which nothing can be more easy, (as, for instance, Dr. Thyssen might have copied, we by no means say he did, from Ploucquet's Literatura Medica Digesta, nearly the whole matter of his dissertation,) is generally looked upon with more favour than it deserves. In regarding the degree of exertion, we overlook the demerits of the application; as, in our admiration of brilliant talents, we sometimes forget their lamentable profanation. After taking the trouble to wade through this sea of mingled absurdity and cleverness, in which the absurdity immeasurably preponderates, the mind is left in a state of fatigue and dissatisfaction, without being indemnified by the added wealth of a single new or true idea. The fallen fortunes of the once celebrated school of Leyden demand our respect; but other schools may learn, in that decay of fame, the danger of the *endemic* malady of compilation, and the fatal reward of being distinguished in a *Thesaurus*, purchased by the exertion of a dull animal industry in providing food for the fatuitous appetite of men who love to read and dream rather than to think and act, and who must be gorged with *quantity*, no matter of what.

The Abdomen.—Supposing that the state of the chest has been sufficiently scrutinised, or that we are led, in the first instance, to ascertain the condition of the abdomen, we are still to keep in mind that the seat of pain is often a source of fallacy. The existence of pain in the obdomen, throughout the whole course of phthisis, is, it has already been said, very common; and if we repeat the observation, it is because it is a circumstance for which the student is seldom prepared.

Pain in the situation of the sigmoid flexure of the colon is often a not well explained symptom of amenorrhœa; and pains in various parts of the abdomen may be the mere result of constipation or flatus. A disorder of the liver may create pain in the epigastrium, or in the *left* hypochondrium; and an affection of the spleen may induce sympathetic pain in the *right*. Pain at the lower part of the abdomen is sometimes the most conspicuous symptom in disease of the heart,—a circumstance particularly noticed by Dr. Ferriar: and pain, midway between the ilium and umbilicus, is frequently occasioned by disease of the kidney.

The following directions of M. Martinet, for the examination of the abdomen, though chiefly taken from Double, yet, as being more concise, seem the most proper for insertion here:—

'The patient lying on his back, the abdomen being uncovered, the head supported by pillows so as to bend upon the chest, the arms extended at the sides of the body, the thighs and legs bent so as to relax the abdominal muscles as much as possible,—we are to proceed to examine the abdomen in the following manner. If we wish to judge of its temperature, we are to begin by ascertaining the degree of heat of the other parts of the body, and then to place the hands upon the abdomen. But if we wish to discover its sensibility, the hand is to be applied broadly on the middle of the abdomen, and successively moved over all the regions of it; a moderate, but increasing pressure, being exercised, and the expression of the patient's countenance being watched.'

It is unnecessary to copy M. Martinet's directions for ascertaining the presence of fluid in the abdomen. The effect of pressure on the part where pain is described as existing, and, what is nearly the same thing, the effect of attitude, are generally important. Pressure is more or less useful in diagnosis according to the skill with which it is made; as, if we wish to ascertain the sensibility of the peritoneum, it should be gentle; if of the mucous membrane of the intestines, more profound; and it should be made upwards or downwards according as we would discover the state of the stomach, of the colon, of the liver, &c.: when pressure upwards produces much embarrassment with respiration, we are led to suspect thoracic effusion or pulmonary obstruction. During this kind of examination, we are to remember how various the organs are which may be affected,—the spleen, the stomach, the liver, the mesentery, the omentum, the small intestines, the colon, the rectum, the bladder, the kidneys, the ureters, the uterus,

the ovaria, the peritoneum investing the whole, not forgetting the common integuments, besides, in extraordinary cases, the blood-vessels, nerves, lymphatics, and lacteals;—an enumeration more than sufficient to make us cautious in our investigations.

Auscultation can seldom be of service in diseases of the abdomen; it may be employed to ascertain the state of the aorta; and it has been used to ascertain the existence of tympanitis, percussion being made at the same time: we entertain some doubts respecting its facilitating the detection of pregnancy. If any tumours are described by the patient, they should always be seen. Three or four remarkable instances have occurred to us of tumour, great pain and tenderness, with much general distress and irritation, and even febrile symptoms, arising entirely from immense collections of fæcal matter, apparently in the colon: in two of these, great alarm had been excited, from uncertainty concerning the nature of the swelling. M. Double says, he has known the projecting spinal column mistaken in a thin subject for a scirrhous tumour in the abdomen. The young practitioner also should be warned, that the abdomen may be tumid, and even unequally hard, for some time, in consequence of the last pregnancy. In many instances, where an examination which ought to have been made at the first visit has been deferred for months from feelings of spurious delicacy, it has at last led to very unexpected discoveries, and often corrected the erroneous narratives of the patient: thus we have seen spinal disease detected, hernia found out, and ascites proved *not* to exist in patients who believed themselves to be dropsical, and who, according to their own account, had been treated as such. General tumidity of the abdomen, with great pain, is frequently met with in severe abdominal inflammation, but is never to be depended upon, unless there are other evidences of inflammation, in the skin, tongue, &c. Some of the most serious diseases of the liver are unattended with enlargement: and in inflammation of the concave surface of this viscus, which is more serious than that of the convex, pressure may produce very slight inconvenience.' Fulness of the epigastrium, and about the umbilicus, may depend on derangements of the stomach and duodenum of no very serious nature. Pulsations in that situation are not uncommon; and although they may often be supposed to be produced by the aorta, there is sometimes much uncertainty about them: they are not unfrequent in dyspeptics, and in hysterical patients,

but are also found to be violent in more serious diseases, as in dangerous attacks of hæmatemesis ; the symptom altogether is of little or no use to the practitioner. Pains along the edges of the ilia, and about the head of the femur, and down the thighs, are sometimes symptomatic of inflammation of the uterus, sometimes of sandy particles passing along the ureter, or lodged in the bladder ; sometimes they indicate disease of the lumbar vertebræ ; sometimes they depend upon an infarcted state of the rectum, and sometimes on scirrhus of that bowel : in all these cases, it is obvious that we can only proceed correctly by taking many other circumstances into consideration. Pain in the loins, a very common symptom, may arise from causes which are so numerous as to defy enumeration : it may depend on serious or on very trifling affections ; on disease of the kidney, or on constipated bowels ; on lumbar abscess, or on lumbago. We are led to apprehend lumbar abscess when the pain is long continued, aggravated by walking up stairs, by stooping, or by rotation of the lower extremities. Very severe pains of the abdomen and lower part of the chest sometimes accompany an inflamed testis. Retraction of one or both of the testes is mentioned by many writers among the symptoms of diseased kidney ; M. Double says he has seen an exemplification of the remark of Hippocrates that it is also an occasional symptom of poison : he observed it, along with a general state of convulsion, in an individual who had taken thirty grains of opium. In cases of severe injury of the spine and its membranes, as in concussion, or fracture of part of the bony canal, with inflammation of the membranes, the patients are often found to make no complaint : all power over the lower limbs may be lost, gangrene may have commenced, and the patient may be visibly dying, and yet, if asked how he does, will reply that he is quite well.

Our observations on the volumes before us have been already drawn out, we are aware, into undue length, although our chief care and labour has, it will be seen, consisted in the abbreviation and selection of such remarks as were worth recording in the particular point of view in which the subject is regarded by us. To make our notice of the value of symptoms at all complete or useful, some other divisions yet remain to be considered,—as, the symptoms indicative of the state of the alimentary canal, the skin, the uterine system, and the functions of the brain ; but we shall endeavour to compress these into as small a space as possible.

III.

REVIEW OF MEDICAL THEORIES.

History of the Theory of HOFFMAN.

THAT Hoffman was among the first to abandon the exclusively humoral or mechanical doctrines, and to teach that the animal system is composed of different parts, mutually influenced by, and influencing each other, is no small title of recommendation to our esteem. Yet, great as this unquestionably is, he rises still higher in our estimation, from his candour in adopting, without hesitation, some of the opinions of Stahl, and his great gentleness and urbanity when arguing against others. Another remarkable characteristic of both these great men, and, indeed, of many of the more eminent physicians of that time, is the unaffected tone of piety that runs through their writings, and their frequent reference to the great Creator of the universe, as the origin of all the phenomena of nature. From this awful source the theories of both take their origin, and both lay down, in plain terms, that their physiology contemplates no more than secondary causes.

In the account which we are entering upon of the principles of Hoffman, it cannot be expected that we shall, in every instance, remark particularly in which we agree, or from which we dissent. Where, however, we consider his opinions as leading to any thing dangerous in practice, we should not excuse ourselves did we omit to notice them.

Hoffman proceeds farther in the process of creation than Stahl for the commencement of his theory; and in this, more, perhaps, than in reality, consists the difference between them. According to the latter, matter is perfectly passive, and motion is an immaterial substance (*rem immaterilem*,) and which is the cause of all living actions. The former, on the other hand, begins with matter already in possession of those qualities which the anima of Stahl bestows; and his opinion is, that no substances are created merely passive, free of all action and operation upon each other, nor that motion is any thing immaterial. For that God, a being of infinite power, wisdom, and goodness, has willed that matter should exist, when created, without his perpetual interference, 'extra se,' and should execute, as it were of necessity, varying movements, and produce accordingly various phenomena and ef-

fects. These corporeal substances are of two kinds,—some simple, homogeneous, invisible,—which are the elements and principles of those compound bodies, that strike upon the senses, and which are extensible and divisible. Both the simple and compound bodies mutually act and re-act upon each other, and by this means change their situations, and effect that motion which is the cause and origin of all the phenomena, qualities, and effects of life, nutrition, and decay; and, in short, of every change in corporeal things. The Deity, however, according to his infinite wisdom, has prescribed certain laws, by which the moving and resisting powers are perpetually and constantly governed, so that they produce certain effects, not according to their own will or design, but according to qualities inseparable from their very existence. After laying down, in ten axioms, the laws of motion; such as, that the greater force must always overcome the less,—that bodies, in which the resisting and impelling forces are equal, are quiescent,—and in short, the common laws of motion, as applicable to hydraulics, mechanics, hydrostatics, and optics; he observes, that from these laws we learn by experience, that the moving powers of bodies can be changed, increased, or diminished, by the substraction or addition of the corporeal mass; and hence, he says, we may most accurately conclude, that the moving power is an essential and inseparable affection of bodies. The idea, indeed, of the passiveness of matter may be conceived in the mind, apart from motion; but certainly, what can be divided, increased, or measured, can neither be immaterial nor spiritual, and, consequently, the *vis motrix* inherent in the mass, and inseparable from it, cannot be so called.

Into this dissertation upon motion, Hoffman has been led by a desire of refuting Stahl in a point which does not appear to us of very great importance: and, though he is tolerably successful in shewing that motion cannot be recognised without matter, he is not very clear in explaining his own views. Stahl urges the necessity of a principle of motion; and Hoffman appears to assert that there is no such principle, but that motion is the consequence of different bodies impinging or acting upon each other. But, in thus leaving the matter, he has only eluded the question; because, though we may thus consider it, when bodies are once in action, from what source does this action originate? Hoffman, if we rightly understand him, says, from qualities rendered inherent in matter, by its Creator. Stahl, on the other hand, by a moving power, principle, *vis motrix* or *anima*, having its origin also in the fiat

of the Deity. That both these are assumptions, is very manifest; and, as we observed in a former article, on the theory of Stahl, the important question for us is not these general assertions, but the particular manner in which these qualities, or this *anima*, is exhibited in particular parts. To proceed, however, with the account of the principles of Hoffman. Having explained his own notions respecting matter, he proceeds to define what he understands by spirits, which he terms those other substances that execute their functions neither by motion nor resistance, which can neither be divided, changed, nor diminished, but are immaterial, or rather incorporeal, and whose nature, essence, and actions, are most distinct from the actions of bodies; and these are intelligent substances, free agents, and are usually named spirits. As he endues these substances with intelligence, he appropriates them to man alone, asserting, that all organic animate brute bodies are destitute of the spirit,—'quæ mens et anima rationalis vocari solet.'* Thus, then, is man described by Hoffman as composed of body and soul, but the soul is not the source of life

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* It must be confessed, that in thus defining the rational soul, and limiting it entirely to man, Hoffman has ventured upon dangerous ground, and his opinions certainly are unsupported by proof. That he has been induced to pursue this plan, in a great measure, from a desire of adapting his doctrines to the truths of revelation, there can be little doubt; nor is there less, that he has thus given great handle to its enemies. We would fain hope, that the flippancy with which Mr. Laurence has spoken upon this subject, has a reference rather to those who, like Hoffman, attempt to be 'wise above what is written,' than from any real disbelief. The evidence upon which physiological doctrines and the doctrines of religion rely, are very different in kind, and admit not, by any means, of the same mode of investigation. From Scripture, and Scripture only, can the latter be drawn; and while, upon the testimony it affords, we believe in our own immortality and responsibility, to this belief we must be confined. In what manner the resurrection shall take place, we know not, nor has this been revealed; and consequently, whatever may be our opinions respecting the immediate nature of the rational principle, it never can be inconsistent with the belief of a future life. There has, indeed, been too much and too little said upon this subject by some late authors; too much, so far as it appears to have been perfectly unnecessary, as well as unbecoming, to have raised important doubts, not by reason, but by ridicule: too little, because, when thus entered upon at all, care ought to have been taken, that deductions might not be drawn by the reader, which were never intended by the author. We do not believe that Mr. Laurence, against whom many serious charges on this subject have been made, is a sceptic in revelation; and we would rather give him credit for being misunderstood, than suppose him possessed of so little candour as to condemn what he had not examined, or guilty of so much presumption as to prefer, what must be manifest to all, has been at most a very superficial examination, to the convictions of the best, and ablest, and most erudite men of the last two thousand years.

nor living actions. For the cause of the vital functions exists equally in the lower animals, and therefore is it necessary that the sensitive and locomotive power should be derived from a far different cause than the immaterial and spiritual essence; and this cause is a specific force, impressed in their first formation upon the different component parts of the body, in consequence of which they act as if by law and rule, not from knowledge or intention, but of mere necessity, which necessity is continued by his omnipotent decree. Life, therefore, if rightly considered, is not correctly defined as the union of the rational soul with the body, but its essence is to be sought for in the body alone, which is common to both, *i. e.* in the functions that are carried in the machine of the body, most artfully constructed as it is, of elastic and innumerable tubes, of various forms, figures, and magnitude. As long, therefore, as the fluids act upon the solids, and the solids execute the accustomed actions, as long as the fluids circulate, the necessary and useful matters are secreted, and the useles or hurtful rejected, so long is the body said to be alive, and so long is life present; but when these motions fail altogether, so that they can no more be recalled, death is at hand, and all the functions dependent upon these motions, together with the visible actions and operations of the rational soul, intelligence, knowledge, external and internal sensibility, cease.

This definition of life may well satisfy the greatest advocates of Bichat and the French physiologists, since with them it asserts, that we have no knowledge of life but from the vital functions, or, in the language of Bichat, that life is the collection of the functions that resist death,—'la vie est l'ensemble des function qui resistent a la morte;' or, in that of Cuvier, equally unintelligible and indefinite, that it only indicates the *ensemble* of the phenomena which have given rise to its formation,—'ce nom ne puisse jamais indiquer, que l'ensemble des phenomenes, qui ont donne lieu a sa formation.' It would really be a waste of time, and almost an insult to the good sense of our readers, to detain them by any lengthened disquisition upon these definitions, which are not a little similar to an explanation of punch, which we once heard in a song:—'Punch is—punch, and, I think, that's the best definition.' The real truth of the matter may, we believe, as indeed it has often been before, be contained in a very few words; and if the celebrated French philosophers, whom we have just quoted, have failed in making it clear, as it must be confessed that they have done, it is to be attributed to an en-

deavour to define that which is not capable of definition. I is like the endeavours of metaphysicians to prove their own existence, which, however little any one may be inclined to question in his own case, is yet insusceptible of logical proof. Neither can life be defined; we know that we live, we say that life yet remains while the individual breathes, even though longer and more difficultly drawn is each succeeding inspiration. We can describe the phenomena of living bodies,—we can state them to exist in a state in which their functions are not visibly active, but are capable of becoming so,—and we may say, that this capability is owing to a peculiar principle; and perhaps this may be rightly inferred; but yet, as we cannot detect this principle, supposing it to exist, as we know not its properties, we must be content either to define life as this principle, which at last would be only defining one indefinite term by another equally vague, or we must be satisfied not to define it at all, which is much the safest method, and study only the manifest phenomena of animate bodies, carefully deducing from them nothing more than the data will legitimately permit. That Hoffman has done this exactly we cannot indeed assert, yet this has evidently been his object; and, as a preliminary, he considers more at large the general structure of the body, and the functions of its several parts.

As life consists in the performance of the several vital functions, does health consist of the *due* performance of the same functions, *i. e.* in their perfectly fulfilling the offices for which they were instituted. Now, the principal, and, it may be considered, the most important, is the secretion of the chyle which is made from the ingested aliment, which in the villous coat, of the intestines is first separated, and by the lacteal vessels conveyed to the thoracic duct, and thence not only supplies the blood, but the whole fluids of the body. Neither less important is the circulatory motion of the fluids, upon which, indeed, very principally life depends, and this motion is affected by the simple contractions and dilatations of the heart, the arteries, and various tubes of the body. It is manifest in all the canals that carry fluids, very visible in the heart and arteries, more obscure in the other vessels, and in the secretory and excretory ducts. By this motion are all the fluids of the body governed, the body itself preserved from decay, life continued, and health maintained; but should it become inordinate, then direful diseases ensue, the functions of the soul are injured, and death is the consequence of its cessations. In all this exposition, there is not much different, from Stahl; but Hoffman now proceeds to state, that in-

stead of considering these actions as excited and governed by a peculiar principle, he believes them to be purely mechanical, having their origin in mere corporeal causes, 'exclusa anima,' which influences only in the voluntary actions; and that contraction and dilatation depend, in the first place, upon the elastic quality of the solids or fibres, 'solidorum seu fibrarum,' of which not only all the canals of the living body partake, but every other part, as the skin, the muscles, the heart, &c. But this elasticity is not alone sufficient to effect the different contractions and dilatations, and to move the fluids, and there is, consequently, a necessity for another cause to produce and invigorate it; and this consists in the influx of the blood and the nervous fluid, by which not only the substance of the heart, but the structure of all the canals in the body, nay, of all the muscles and fibres, are strengthened and animated; insomuch, that all tunics composed of arteries and fibres, and possessing considerable contractile and expansive power, are pervaded by arterial blood, and furnished with nerves or nervous membranes.*

Of the existence of the nervous fluid, Hoffman makes no doubt; and refers for a proof, to the consequence of tying or dividing the nerve proceeding to any particular muscle. If, in the room of terming it nervous fluid, he had called it nervous influence, there would be little, perhaps no difference, between his physiology and that of the present day, in this respect. He seems to have been thoroughly aware of the mutual dependence of the nerves and blood vessels upon each other; and, consonantly to this opinion, he explains syncope by the generally entertained hypothesis, that the diminution of sensation is the consequence of a decreased afflux of blood to the head, the nervous fluid not being secreted in sufficient quantity, from a deficiency of material. And again he infers, that something is secreted from the blood in the brain, because compression of the brain, however induced, is followed by the abolition of sensation and volun-

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* What were formerly called 'nervous membranes,' appear to have been nothing more than condensed cellular membrane; at least, modern anatomists admit of no such structure. Haller enumerates, among the coats of the stomach, a first cellular coat, lying under the peritoneum, a muscular coat, a second cellular coat, a nervous coat, a third cellular coat, and a villous; while Mr. Bell gives only two coats, or at most three, considering those parts which have usually been considered such as not entitled to the name. With the term of nervous coat, however, as used formerly, an idea of peculiar properties, somewhat similar to what Hoffman has attributed to them, was connected.

tary motion, the compression preventing the free approach of the blood.

It appears to have been thought necessary generally, when Hoffman wrote, to leave nothing unexplained; and hence the ingenuity of authors was taxed to an extent, of which, at the present day, we have no conception, when it is permitted us, occasionally at least, to acknowledge our ignorance. Thus does Hoffman, not satisfied with investigating the visible phenomena of the nerves and brain, the consequences of disease, experiment, or accident, as exhibited in them, attempt to shew us the nature of the fluid itself; and he asserts it to be no other than that universal æther (catholicum æthereo—aerium,) whose power and force in producing motions and admirable effects have been demonstrated both by the air-pump and chemistry. From his stating immediately afterwards, that no organic body, whether plant, brute, or man, can exist without it, and that it enters into the innermost pores of the body, we may suppose that he considered it the same with the intro-aerial spirit of Mayow, which was either oxygen itself, or a compound of oxygen. Mayow, in inquiring what is that aerial substance, which is so necessary to the support of life, that without it life cannot exist a moment, says, 'that most probably some intro-saline particles, very subtile, agile, and highly fermentative, are separated from the air by means of the lungs, and transmitted into the mass of the blood. And so essential to life does this aerial salt appear, that even plants will not vegetate if the access of air be precluded.' Here, also, we cannot but notice the opinion of the celebrated Willis on the same subject, who, after discussing at some length the nature of the 'anima brutorum,' and exhibiting the names of Hippocrates, Plato, Pythagoras, Aristotle, and Galen, as supporting the opinion that the soul is a fire, or something analogous to it; together with certain arguments drawn from fire itself, as consisting of subtile contiguous particles, in constant motion, &c., concludes that there is nothing paradoxical in maintaining that the soul, dwelling in the blood or vital fluid, is a certain fire or flame—'animam in sanguine aut liquore vitali gliscentum, aut ignem aut flammam quandam esse.' Such are the wild hypotheses in which great and powerful minds have at times indulged. And how humiliating is the contemplation! Gifted with more than the common share of that high intellect which allies human nature rather to heaven than earth, we find a point, beyond which they are not more able to penetrate than the uneducated and unthinking clown, and every attempt they

make serves but to encircle them in error and absurdity. It is indeed an excellent illustration of the labours of those who, in the language of Lord Bacon, 'conjectis paulisper in res et exempla et experientiam oculis, statim quasi inventio nihil aliud essel, quam quædam excogitatio, spiritus proprios, ut sibi oracula exhiberent quodammodo invocarunt.' The phenomena of mind are certainly fully as legitimate objects of investigation as any of the other phenomena of nature; but when opinions are pronounced respecting them, it is to be expected that they shall be the deductions of rational inquiry, and not the mere idola of wild speculation. How far we may be able to advance in the knowledge of those secondary causes, whence the visible operations of the intellect proceed, we do not know, but this is at least certain, that a real progress can only be made by patient and humble diligence, and that every endeavour to proceed in any other way will most assuredly be attended by error, defeat, and mortification.

The source of this nervous fluid is originally the blood, which he very expressively terms the 'promus condus omnium virium et liquidi etiam cerebri ac nervorum,'—the great distribution of the powers both of the agile fluid of the brain and of the nerves. It is unnecessary to consider much at large the arguments by which this is supported; for while in one sense this is true, but scarcely more so than that the food we eat supports and strengthens all the animal system, in another sense it may be equally predicated, *mutatis mutandis*, of the nerves themselves. For as yet no arguments have been brought forward to prove that the circulation can equally well proceed in a part, when the communication between it and the brain, by means of the nerves, is intercepted, for we do not consider the experiments of Dr. Wilson Philip as sufficient for this purpose; and most assuredly a limb wastes as certainly and as quickly under such circumstances, as when the free efflux of blood is prevented. The principal odject of Hoffman, however, in pressing this point, is to shew that the vigour and tone of the heart depend upon material and external moving causes, and not on any immaterial, much less on a rational essence. For it appears almost necessarily to follow, that if the functions be entirely dependent upon theblood, and that from it even the *parts fluidæ mobilissimæ* of the brain and nerves be separated, that then the actions of life have a material cause. And, so far as we can trace them, this is correct; but there is a very early point, at which, when we arrive, all explanation fails, whether we attribute the different phenomena to one cause or another. It is true, indeed, that a

superficial consideration seems to afford us light, when we suppose something, as the *anima* of Stahl, to be perpetually influencing them; but it is scarcely necessary to do more than state the fact, that, in reality, whether we adopt Hoffman's theory of vital properties, or Stahl's essence or *vis motrix*, we are not better acquainted with the series of causation in the one case than in the other, so as to obtain implicit credence for either. We have only, in the latter case, brought forward an additionul agent, whose mode of effecting its various functions it is not possible for us to ascertain; neither if all the functions be carried on by means of certain properties are we better informed. We can trace the blood into the secreting organs, without being able to follow up that animal chemistry, by which what was lately blood is now bile or urine, or bone or muscle.

So far, therefore, as the theories of these two authors touch upon those subjects which are not visible, the proof, perhaps, is equally favourable to both;* but inasmuch as Hoffman abides much more steadily by manifest phenomena than Stahl, and is altogether less closely bound to a peculiar system, he has considerable superiority in his physiology over his rival. In attempting to state more precisely the opinions of these two great men, we feel more difficulty than we can express, from the imperfection of language, or from our own inadequate knowledge of its resources. It does not, however, appear to us that even Hoffman himself althogether rejects the idea of some principle or nature, or by whatever other title it may be designated separate from the organic body, since in different parts of his works he alludes to the processes of nature; but that he rejects the anima of Stahl only, and endows matter itself with prop rties sufficient to carry on the vital function from a kind of necessity; which very necessity is a something not originally inherent in matter, but imposed upon it: and, because the former opinion bore upon its face a more deep source of the existence and providence of God, according to the belief of some, he asserts, that if the subject be more profoundly reflected upon, so far is it from being favourable to such a conviction, that it rather tends to atheism. 'For if bodies,' he says, 'are of their own nature merely passive, and of themselves can effect nothing, certainly it must follow that the operations of corporeal things are the operations of God, and, consequently, that no difference exists between the crea-

*When we make this observation, we except that part of Stahl's system which supposes intelligence unless we may use the same license as Bichat has done in attributing sensibility where there is no sensation.

ture and the Creator,—an opinion which led Spinosa to believe that the world itself was God, and that its various operations and modes of operating are divine attributes. The learned Cudworth, equally beset with these difficulties in his intellectual system of the universe, and strongly attached to the doctrines of immaterialism, 'insists largely upon an artificial, regular, and plastic nature, devoid of express knowledge and understanding, as subordinate to the Deity;' . . . 'for without such a nature, either God must be supposed to do all things in the world immediately, and to form every gnat and fly, as it were, with his own hands, which seemeth not so becoming of him; or else the whole system of this corporeal universe must result only from fortuitous mechanism, without the direction of any mind.' In all this, certainly there is, something praiseworthy from the anxiety evinced for the honour of the Almighty; yet we cannot but think, that the talents and ingenuity of these celebrated philosophers might have been better employed, than in attempting to limit the operations of the Creator by their own finite intelligence. From the one general and expanded truth, that all the universe is under his superintendence, none but a mad man can dissent; but of the subordinate instruments which he employs, or of the manner in which they are employed, we know only those which are corporeal; nor is it of much importance, perhaps, to us to know more Certain it is, that the laws he has imposed upon us are equally binding, whatever opinion is held, and as much as though we were well acquainted with every minute lik in the chain of creation. We have been led into this digression very much farther, than we originally ittended. We would, however, hope, that in having done so, we have not been employing ourselves uselessly; but that, by having shewn that a determination to investigate only the palpable phenomena of the vital functions is not necessarily connected with any dangerous religious error, nor the belief in the existences of certain substances or principles separated from the body necessarily connected with religious truth, we may induce the advocates of either opinion to treat each other with more candour than they usually do, and impugn the reasoning of their adversaries, without misrepresenting their motives.

With respect to the phenomena of disease, Hoffman densie the doctrine of Stahl, that they have a salutary tendency, but asserts that their actions are neither elective, nor wise nor rational, but rather erroneous, confused, and tumultuary, and only accidentally, or when directed by the physician, saluta-

ry. Neither does he admit plethora as a very general cause of disease, but contends that many very severe maladies arise from deficiency of blood, and likewise frequently when there is no manifest change in the quantity from that of health. Nor does any thing more clearly prove that plethora is not the universal cause of disease, than the severe evils which follow long-continued hæmorrhages, as cachexia, dropsies, atrophy, hectic fever, &c. The arguments upon this part of the subject are scarcely ever conclusive against the theories of Stahl, and rather elude the question, or attribute opinions to that author, which do not appear to us in every case fairly deducible. We are not, however very willing to discuss this part of the subject at length; and we recommend very earnestly to our readers an attentive perusal of the posthumous volume of Dr. Parry's Works, which is just published. There is a clearness in his statements, and such a general precision of thought, as we do not very freduently meet with; and though occasionally inclined to dispute the accuracy of his opinions, we have seldom read a work from which we have derived more instruction. The illustrations it contains, with the reflections attached to them, from an admirable commentary upon the circulating system.

Plethora, nevertheless, is occasionally the source of disease; nor is excess in quantity the only way in which the blood and humours may be productive of evil. For if we consider how many and great complaints arise from bile, rendered corrosive and acrid, as cholera, diarrhœa, dysentery, inflammation of the stomach and intestines—that the urine, &c. is secreted from the blood—and that, if this secretion should be retained, the blood itself must be vitiated,—we cannot but acknowledge that disorders may ensue as well from the quality as the quantity of the humours and the last-mentioned fluid.

Whatever may be the cause, however, which invert or injure the functions of our bodies, they principally affect those parts in which the principal moving power resides, upon which the action of the heart and arteries, and the formation and circulation of the fluids, depend; and these parts are the nerves, the membranes, and the vessels and canals which they form. If, therefore, these nervous parts, membranes, and canals, are rightly constituted, *i. e.* are in a moderate state of tension and relaxation, and exercise an equal oscillatory motion, then the whole economy of the system is vigorous and healthy; but when they suffer any violence externally, by distension, compression, contortion, or any other means, or internally are ve-

hemently agitated by their fluids, a derangement of their actions immediately ensues, and disease is at hand. This derangement is so much the greater as the exciting external causes are more powerful—and this is especially to be remarked, that where the morbific cause is situated, there the greatest disturbance of the functions is observed, and the symptoms are most marked. And again, it is to be regarded as a law, similar to those by which the universe is governed, that all sensative and nervous organs sympathize with each other, those, indeed, first which are supplied from common nervous trunks, and afterwards those which are more remote. The knowledge, therefore, of these sympathies, and of the causes by which they are acted on, he asserts to be the foundation of all rational pathology and therapeutics.

These causes he has enumerated at some length, and lays particular stress upon the function of digestion, which he designates as 'locus fœcundus et aptus procreandæ materiæ, quæ morbos, et functiones secundum naturam turbat,' a fruitful and well-adapted place for producing that matter, which causes disease and disturbs the natural functions; an opinion which neither Dr. Philip nor Mr. Abernathy could express in stronger terms. Of the other causes affecting the nervous system, some are, as it were, diseases themselves, as plethora, calculi, flatus &c.; others are external excitants, as impure air, mettallic exhalations, poisons, &c. He does not, however, appear very clearly to have distinguished between the various modes by which these different excitants necessarily act.

As he entirely denies that morbid actions are *per se* and at all times salutary processes, so likewis he dissents, *in toto*, from the opinions of Stahl respecting the determination of blood to different parts at different ages, that it may find a path for escape from the system. With this limitation of his opinion few, perhaps, will disagree, although they may be disposed to think, that though not carried to the head and nostrils, for the purpose of evacuation, yet the loss of blood from the nose may not unfrequently be a salutary process, and that a similar assertion will hold good of other local determinations.

Hoffman was also the author of the explanation of fever, afterwards more fully developed in our own country by Cullen, and he denies that this general affection of the system is, as taught by Stahl, instituted by nature, partly to exhaust the too abundant blood and humour by the increased heat, and partly to eject the excrementitious matter into which the hu-

mours are resolved through appropriate emunctories. It may not, perhaps, be improper to give Hoffman's theory of fever in his own words :—

'I believe,' he says, 'that fever is an affection of the whole nervous and vascular system, which consists especially in this, viz. that the contraction and tone of these nervous and fibrous parts become, from a strong spasm, increased and more intense, with a great disturbance and inequality of the vital actions, viz. the circulation of the blood, and the secretions and excretions: while at first the blood and humours desert the external parts, and are carried in greater quantity to the heart, great vessels, and the head. But afterwards, on account of the greater afflux of blood in the heart, arteries, and membranes, the contraction of the arteries and the pulse becomes quicker, and the circulation of the humours is accelerated throughout the body, either for good or ill, either for the restoration and preservation of the body, or for its destruction. This motion of the blood to the surface of the body depends on the action of the heart and arteries, excited by the greater quantity of blood impelled inwards, and continues so long as the spasm occupies the vessels and fibres. It ceases when this ceases, and then the febrile action is ended. Lastly, the stronger the spasm, the greater is the subsequent debility or atony.'

It cannot require much conversance with the phenomena of fever to perceive that most of them may be, in this manner, accounted for ; and though the doctrine of spasm, as it has been termed, is far from being universally assented to, no theory of fever can be hitherto said to have superseded it. It would seem that Dr. Parry, than whom a more competent judge has seldom existed, considerd the opinion that there is an inequality in the distribution of the blood in all fevers as proved. After enumerating synocha, typhus, &c. he says, that 'they all imply some defect of blood in one or more parts, and, consequently, excess in one or more others; and it is probable that the defect producing, or produced by, excess about the heart or brain, may be the exciting cause of the increased action which follows by the stimulus of that excess.'

The great superiority, however, of this theory over that of Stahl, Hoffman has himself noticed, and this is, indeed, a practical superiority. From Stahl's strict adherence to the operations of nature, and from his conceiving that they were all originally instituted to a good end. he refused, in many instances, to interfere with process of disease, where to have done so would have been highly serviceable. Thus, as we

mention in our paper upon his theory, he did not admit of blood-letting, because the anima or vis motrix sought to dissipate the superabundant humours by perspiration. Nor would he admit of any method of preventing the continuance of fever, lest nature should be disturbed in her salutary processes. But Hoffman inculcates, not, indeed, to restrain those actions which are beneficial, and which are known, from experience, to tend towards a cure, but to endeavour as quickly as possible, and safely (*tuto et celeriter*,) to remove the exciting causes of fever, by appropriate and opportune remedies; no regard whatever being had to the period of the disease, which may be successfully, and without any ill consequences, overcome in its first commencement. With this exception, however, of cutting the fever short, as it has been termed, his treatment is equally simple with that of Stahl's, and with him he disapproves of the use of tonics, and especially of the Peruvian bark, during the paroxysms. Emetics he recommends as sometimes preventing the continuance of the fever, and bleeding he advocates as sometimes called for.

Hoffman's opinions respecting the actions of remedies do not, by any means, appear to us in good keeping with the general caution evinced in his doctrines. He asserts their action to be purely mechanical, and that it is so, he states, is either evident to the senses, as when oily, moist, and tepid remedies lubricate, relax, and soften hard and constricted parts; or is proved by this, that the composition of medicines remaining unchanged, their effects are modified or prevented by the presence of other substances in the body, as when mucilaginous and oily substances, besides their emollient virtues, reduce the acrimony of the humours, and moderate their stimulating properties. Of the insufficiency of this theory, it would be useless to enter into any long discussion. No one need now to be told, that the effects of medicines can never be explained upon the supposition of their actions being all mechanical; nor is any one now so ignorant as to believe that a correct idea can be entertained of the effects of drugs from their manifest qualities. Who would imagine that the hot and fiery taste of croton oil belonged to the most active purgative with which we are acquainted?

In considering what is the peculiar excellency of Hoffman's medical principles, we may state them as principally characterised by his comprehending all the systems of the body, and teaching that diseases are not exclusively nervous, nor exclusively originating from the sanguiferous system, but that

every system is more or less affected, though the affection of some one, in particular, will generally predominate. Of the general value of his writings we have formerly spoken, and again we repeat, that his system of medicine is a treasure of correct observation and practice. The phraseology is, indeed, frequently old, the treatment is too often combined with theoretical speculations, the medicines are frequdntly far too composite; yet are his histories most admirably clear, and scarcely inferior to the highly finished drawings, we can hardly call them descriptions, of our own Cullen. To the industrious and intelligent student, Hoffman may be safely recommended: he will find in him much most valuable matter; and not seldom, perhaps, will he be indignant at the shameless and unblushing manner in which some moderns have built up their own reputations at his expense, without acknowledging their obligations. The more, indeed, generally that we become acquainted with the older medical literature, the less do we find novel among the moderns; (in this, however, we except surgery, which has unquestionably been greatly improved in these latter times.) The phraseology has, indeed, been changed, but we could almost say of the various medical theories what Lord Burleigh said of learning a brace or two of foreign languages, that we have but the same victuals served up in so many different dishes.—*London Med. Repos. and Review.*

MONTHLY SUMMARY

OF PRACTICAL MEDICINE.

I. ANATOMY AND PHYSIOLOGY.

Cases of numerous Calculi in the Bladder.

M. Murat recites the case of a man, seventy-five years of age, from whose bladder he removed 678 calculi after death. At the same sitting of the Royal Academy, M. Souberbielle related several successful operations of lithotomy: one case of the high operation, in a female; another by the lateral operation, the stone weighing five ounces and a half. M. Dubois remarks, that the existence of several calculi atthe

same time lessens very much the benefit of the oberations, since it demonstrates a disposition in the kidneys to form them again; and he wishes that the proceedings of M. Civiale should be put in practice for the purpose of breaking down large calculi, even previous to an operation, whether it is to be performed above the pubies or through the perineum. M. Ribes, in confirmation of the first remark of M. Dubois, related the case of a man, who had undergone the operation of lithotomy three times, for the extraction of numerous calculi, and yet at his death, which took place a long time after the last operation, there were three hundred small stones found in the bladder, on opening the body.—*Revue Medicale.*

II. SURGERY AND MIDWIFERY.

M. Janson *on the removal of a great Portion of the Scapula.*

A female employed in the manufactory of silk, forty-thee years of age, began, in 1819, to receive a tumor on the posterior and middle portion of her shoulder-blade: it was immoveable, painful to the touch, and appeared fixed to the bone. In 1824, this tumor had acquired the size of a child's head, was hard, wrinkled, and had occupied all the bone, excepting its inferior border and the supra spinal fossa, and had extended itself into the highest part of the axilla, with an elongated and voluminous pedicle. It was moveable in all directions, and carried the arm with it in all the motions given to it. The portion of this swelling which was situated in the axilla, obliged the patient constantly to keep her arm elevated, and at a right angle with the trunk of the body. Violent pains, darting from the shoulder along the arm, were felt in the breast. At length, from want of sleep and indigestion, the patient had become emaciated, and was evidently sinking.

On the 4th of October, M. Janson attempted the removal of the tumor. He included it within two semi-elliptical incisions; dissected the edges of the wound, so as to preserve as much skin as possible, and detached the tumor in every direction; then raising it, and the tumor breaking in the centre througout its whole thickness, he removed the greatest part; cutting the attachment of the trapezius, of the supra and infra spinatus muscles, he discovered that all that portion of the scapula situated above its spine was in a healthy condition; and, separating by the saw the diseased part of the bone, he thus preserved the articulation of the arm. Finally, laying

bare that portion of the tumor situated in the axilla by an oblique incieion from below upwards, he dissected it, and drew it upwards carefully; the cellular tissue which fixed it to the arm gave way, and he succeeded in removing it entirely. All the vessels were then tied; the axilla properly supported by a plug; and the edges of the wound, which was six inches across, and nine in length, were brought together with sticking-plaster.

For a few days the success of the operation was doubtful, from causes affecting the general health; but these were calmed, and the patient quitted the hospital at the end of two months, nearly cured.—On the 15th of March, it was entirely healed, and the motions of the limb were becoming daily more free.—*Archives Gen.*

M. Civale's *Lithontriptor.*

Since the report made by MM. Percy and Chaussier, in March 1824, relative to the above-named instrument, the author has had under treatment many petients labouring under calculous disorders, which, presenting some remarkable differences, have compelled him to adopt certain modifications in his instrument, and have furnished him with the cases now about to be cited.

The first section contains those cases in which the operation has been rapid and easy: these are six in number. The first is a female, aged seventy-two, worn out with fatigue and pain: the instrument was not introduced with as much facility as was expected; but, when this was done, a stone of about the size of a nut was readily seized; it was very friable; some fragments came away with the urine, others were brought away. Five days afterwards it was decided, after a close examination proved no remains of the stone to exist in the bladder, that recovery was complete. In the second case, two separate introductions of the instrument were necessary. In the first operation, seizing the stone, and bringing away two fragments, was the work of seventeen minutes. The patient was a lieutenant of the navy, and who did not appear to suffer any pain in this first trial. Three days afterwards a second stone was seized and broken, being more friable than the first; and, four days later, the central portion of the first stone was taken out: it was composed of oxalate of lime, covered with uric acid; its diameter was four lines and a half. The

third patient required three operations to destroy a calculcus, which the patient had borne for many years. The fourth case required an equal number of operations: there is nothing remarkable in the detail of them; but the family of this patient was remarkable for an hereditary disposition to this disease, both his mother and children having been affected by it. In the fifth case, six operations were requisite, and long intervals were interposed between them, in consequence of the imprudence of the patient, a captain of chasseurs. Several of the most eminent surgeons of Paris were present at these operations, and bear testimony to the small degree of pain apparently endured by the patient, whose recovery was perfect. The last case, in which the stone was the size of a large nut, required seven introductions of the instrnment: there was a slight attack of fever during the treatment of this gentleman, who was of a very irritable constitution.

The second section contains those instances in which the operation has been tedious, and the cure uncertain, without citing the cases, which are long, we shall observe, that many of these patients had been afflicted for several years with large or numerous calculi; that in some there was disease of the bladder or kidneys, with puriform urine; and, in a still smaller number, there was so great a sensibility of the bladder, that the mere passing a catheter was sufficient to bring on alarming symptoms.

M. Civiale, after detailing seven cases of the above description, replies to some objections that have been made to his method, and then draws the following conclusion:

1st. That his operation is applicable in the majority of cases, where the stone does not exceed one and a half inches in diameter, and where it has not produced too much local or general disease.

2d. That its application is easier, and the cure more certain, in proportion as the disease is more or less recent.

The third reason is only a corollary from the second.

4th. When, from any unforeseen circumstances, lithotomy has not had the desired effect, it does not lessen the chances of the lithontriptor process.

5th. The introduction of the instrument, and the manœuvres necessary to seize and break down the calculus, are not attended with much pain, and are not likely to be followed by danger.—*Revue Medicale.*

PATHOLOGY AND THERAPEUTICS.

Mr. Mason *on Scrofula.*

I may, however, briefly observe, that since the date mentioned above, I have treated upwards of eighty cases of scrofula, and scrofulous ophthalmia, by the internal exhibition of iodine, sometimes combined with its external employment in the form of friction; and, in a very large proportion of the cases, when the medicine was persevered in, the disease was either cured, or the general health and local disease very much ameliorated. Several of the patients, after calling upon me two or three times in the course of the first month, and finding themselves better, never returned, so that I do not know the final issue of these cases, but from time to time I learn, by accident, that a cure has been accomplished in some of the cases alluded to.

I beg leave, however, to observe, that any man who expects to cure every case of scrofula, by iodine, or by any other remedy, will find himself very much disappointed, as the external symptoms of struma are very often complicated with tubercles in the lungs, which I fear are beyond the power of iodine, or of any medicine we possess, to dissipate, when once *fully* formed. At the same time I must say, that I am not without hope, that in iodine we possess a remedy that bids fairer than any other to *prevent* the formation of tubercles, or to dissipate them in their *incipient* state. I have had occasion to exhibit iodine in many persons of consumptive families, and I have been watching the result with attention for the last two or three years; but it will require many years, and extensive observation, to come to an accurate conclusion on this highly important subject. But, with respect to the efficacy of iodine in scrofula and scrofulous opthalmia, I think my experience warrants me in pronouncing it to be, by far, the most powerful and energetic medicine that I have employed in the cure of these diseases.—*Ed. Med. and Surg. Journal.*

Dr. Fuchsius' *Case of Ileus cured by an Operation.*

One of the most painful and dangerous diseases is undoubtedly Ileus, when it occurs as a consequence of intus-susceptio of the intestines, for which reason every thing that throws light on this complaint must be acceptable, especially as, up to the present time, notwithstanding the progress we have

made in the healing art, there still exists so much uncertainty and ambiguity in the knowledge and treatment of this disease. I therefore consider it my duty to make known the following case, which is worthy of notice as far as relates to the operation which was performed on the patient, as well as its successful termination. The disease showed itself in a strong healthy man, æt. 28, Thomas S. from Stifflinghausen, in the district of Olpe. Whilst collecting wood, whereby he was frequently obliged to stoop, and immediately after to raise himself, all at once he felt a drawing pain in the region of the navel, rather to the right and upper part; the pain rapidly increased, and compelled him to drop his work. As soon as he reached home, which he did with great difficulty, as the least jolting aggravated the pain, he laid himself down to rest. On awaking he vomited once, when some slime was thrown up; the pain was apparently lessened. Towards evening he had a stool, but it appeared to him as if the feces only came from the lower part of the rectum. During the night the pains were not so severe, but on the following day (the 10th) the patient was considerably worse; violent colick pains came on every 20 or 30 minutes, which lasted about five minutes, and were succeeded by intervals of ease. The doctor of the parish, (Dr. Weiskirch) from Attendorn was called to the patient, and considering that he was labouring under a spasmodic inflammatory affection of the bowels, ordered castor-oil, salts and venesection, which appeared to relieve the man. The relief was, however, of short duration, for in the evening the colick pains returned with increased violence, and appeared from every 15 to 20 minutes; at this time also he passed a good deal of wind. The pulse was soft, neither full nor accelerated, the temperature of the skin not much increased, the abdomen neither distended nor hot to the feel; warm baths were ordered, and the former means tried, and this treatment was continued up to the 14th, without any good effect. At this period, five days from the commencement of the complaint, I was consulted. On my arrival, I found the patient in bed, and free from pain; his countenance was pale, and slightly tinged with yellow, there was an expression of anxiety and uneasiness in the look; the eyes were also slightly yellow, and the tongue covered with a dirty fur; the temperature of the body was not much increased; the urine was of a pale yellow, and turbid, and the pulse was regular, about 60, and soft. The abdomen was neither distended nor hot, but throughout its whole extent it was tender to the touch. The most sensible part was in the neighbour-

hood of the navel, rather on the right side superiorly, just where the ascending portion of the colon terminates, and the transverse begins; here there was an evident hardening. The exact extent of this spot, on account of its depth, could not be accurately ascertained, but it extended itself from the right towards the left side, commencing about two inches above the navel on the right side, and reaching as far as the rectus on the left. The hardened spot was unequal on its surface, and to the feel appeared like an uneven distended intestine. There was no hernia in any part. Since the 9th the patient had not had any evacuation of consequence; he had only vomited once since the attack. I had scarcely been present half an hour, when the scene changed itself; the colick pains came on with such violence, that the poor man was obliged to run up and down the room in a most distressing manner, looking out for something by which he might support himself. During this paroxysm, which lasted from 5 to 6 minutes, I found the abdomen somewhat distended and painful, particularly in the part above mentioned, where something hard, about the size of my fist, could be distinctly felt. The induration lay in a transverse direction. According to the patient's statement this spot was the chief seat of the pain, as the pains were always most violent, in this part, and also took their origin from it. Respecting the course of the disease, the patient could assign nothing which had produced it; it came on suddenly whilst engaged about the wood in the forest; he had neither eaten any thing out of the common way, nor had he caught cold; in short, the complaint came on all of a sudden, without any assignable cause whatever. The etiology of the case was quite obscure to me, and I could not distinctly decide on the nature of the disease. I was convinced that neither a pure inflammatory, nor a spasmodic affection was present, as many of the distinguishing marks of both were absent. The idea, however, struck me, that the complaint arose from mechanical obstruction. On account of the violent pain, I thought it necessary again to repeat the bleeding, and also directed leeches to be applied over the hardened part. The antiphlogistic plan was continued till the 20th; baths, fomentations and clysters were all tried without any advantage whatever. The patient's strength was considerably reduced, and his spirits very much depressed. The indurated part remained the same; when the patient moved, it was painful, and during the paroxysms it was harder and more evident to the feel. The pain always began in the part, and extended itself over the whole of the abdomen. I be-

came convinced more and more of a mechanical impediment, and of an entanglement (Verwickelung) or running of one part of an intestine into another (Einschiebung,) as being the probable cause of the complaint. I stated to the relations my opinion of the case, viz. that without an operation I considered recovery scarcely possible, and for the operation to have the best chance it should be performed soon, before inflammation and mortification of the intestines should take place.

From the treatises on surgery of both old and modern times, as far as my recollection served me, nothing satisfactory or conclusive was to be drawn. The best authorities all stated, that there was no sure diagnostic mark which pointed out with certainty the presence of a volvulus or an invagination of the intestines. Among many others, I will only here quote the words of the great Richter on the subject, to be found in his *Specielle Therapie*, Band 4, p. 224. "The extraordinary difficulty of the diagnosis," namely of the volvulus, "so that one can never know with certainty where the mechanical impediment is to be sought, and the circumstance that the operation can only be undertaken after a long continuation of the disease, when the other means have failed, and internal inflammation and adhesion have probably taken place, are sufficient to prevent us from expecting a successful issue. Notwithstanding, cases occur where it is the duty of the physician to risk the operation." These last words first created in me the idea of the possibility and necessity of an operation in the case before me. Before I performed the operation, I was not aware of any case in which a similar operation had been performed with success; afterwards, however, I found that Nuck had operated successfully. And this is the only successful case I know, contained in the annals of medicine. On the other hand, there was no lack of unsuccessful operations for this complaint, from Barbette and Hevin down to Zang.

The patient still continued in the same state, and all the means which had been tried produced no good effect whatever. I therefore determined to change the remedies and try some others. Internally I ordered every half hour from two to three table-spoonsful of lukewarm red oil, and every hour a grain of opium, and this was continued for six hours in succession. From the use of oil in conjunction with large doses of opium, I have sometimes seen very good effects in obstinate costiveness, particularly in strangulated hernia, combined with a spasmodic affection of the intestines. At the same time I ordered the abdomen to be rubbed with warm oil. The effect of this treatment was a longer absence of the vio-

lent pain, a natural consequence of the lessening of the peristaltic action of the intestines through the operation of the opium. Together with these means I tried several clysters with cold water, which were thrown up the rectum in a strong and long continued stream. These, on the removal of the pipe were always immediately returned, and according to the patient's feel they reached as far up as the hardened part, but no farther. From these clysters, which Molinari in Italy first tried, and de Haen strongly recommended, and which Abercromby, Smith, Maxwell, and Dr. Robert Chisholm state to have been used with benefit, were tried in this case without the least advantage. I regret that I did not try the inflation of the intestines in this patient. Hippocrates, speaking of the different remedies in this complaint, says, " Jubet hoc in effectu, alvi apertionem tendandem per glandem satis longam, ex melle paratam, quæ anteriore parte felle taurino oblinatur, et bis ac ter submittatur, quo combusta, ut inquit stercora circa rectum intestinum contenta educantur. Post hæc clysterum adhibendum docet. Et ulterius addit sin minus hæc opem ferant folle febrili *in Ventrem indito flatus immitatur*, a quo et ventrem et intestini contractionem distendere oportet, et extracto folle, clysterem applicandum."

No abatement of the disease took place, but the patient had become sensibly worse. On the 18th I found the patient extremely weak, vomiting had supervened, not however of fœcal matter, although it had the smell; the abdomen was greatly distended, but the indurated part was just in the same state and position. I enforced on the patient the necessity of submitting to the operation as the only chance of his life. I also called in two other medical men, one of whom suggested the use of pure mercury. With this exception, they agreed that every remedy had been tried. Mercury was therefore given in the dose of six ounces at a time; vomiting immediately followed the exhibition of the medicine, but none of it was thrown up. It proved, however, just as unsuccessful as all the other remedies which had been tried. The operation was therefore resolved on, and on the 19th at 11 *a. m.* I proceeded to perform it in the presence of Dr. Weiskirch.

Operation.—After the patient was placed on a convenient table, we examined accurately the situation of the hardening, and determined on opening the abdomen at the outer edge of the right rectus muscle, about two inches above the navel. After dividing the integument with a common scalpel, and making a small opening in the peritoneum, I introduced my finger, and with a blunt pointed scalpel divided the peritone-

um on it so as to make it correspond with the external opening which was between two and three inches. I then besmeared my hand with oil, and carried it into the abdomen in order to feel for the indurated part. Scarcely had I introduced my hand, when an attack of the pain came on, and a portion of the intestines was protruded through the wound, which was immediately replaced by my assistant. On continuing the examination, I discovered, in a transverse portion of the ileum, a foreign substance just where the hardened intestine was to be felt. I drew the intestine out in order to examine it more minutely. The intestine was neither inflamed nor expanded, but it contained in its cavity a soft, coherent, and compact mass, which at its upper part, was somewhat compressed, and thus felt harder than the rest. So far as I could follow this part of the intestine, this contained matter was to be felt. I also here immediately detected an intus-susceptio ; but in spite of all my efforts, I could not reach the commencement of it so as to bring it out. Two modes of proceeding were open to me in order to remove the intus-susceptio, either to make a transverse incision in the integuments from the right to the left side, or to open the intestine itself. The last mode seemed to me the most adviseable, both because the patient was already very much exhausted, and because the operation would be sooner completed. The intestine was opened at the end of the discovered intus-susceptio, and immediately a part of the strictured intestine which was made about two inches in length, and gradually pushed the intus-suscepted part back from the right to the left side, whilst I gently drew that part of the intestine which contained the intus-susceptio towards me. By this means I fortunately succeeded in unfolding the entangled intestine, which amounted to two feet in length. There was not the slightest trace of inflammation, nor any thing unnatural to be discovered in the part ; there was merely a round worm which was situated in the upper part of the intus-susceptio. Of the mercury which had been employed, I could not find any remains, although I examined the duodenum and stomach ; afterwards also there was no trace of it seen. The intestine was brought together by means of six spiral form stitches after the manner of the glover's suture,* and the end of the silk was allowed to hang out of the external wound in the abdomen. The integuments were brought together by four interrupted sutures (Knopfrath,)

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* This suture is almost solely employed in wounds of the intestines. A very fine thread is always necessary for this suture, and in this case fine silk was used.

dressings were laid over these, and lastly a bandage similar to Monro's bandage was applied. The patient was put to bed, and received some chicken-broth. After the operation no medicines were given, but we confined ourselves merely to regulating the diet of the patient, which for the few first days consisted of gruel and chicken-broth alternately changed. The colick pains left the man immediately after the operation, and he had a natural evacuation on the night of the 21st and 22d. On the 4th day the bandages were removed on account of their tightness and the distention of the abdomen. The wound had a very good appearance, being only a little red; the discharge was moderate. On the 8th day the wound was nearly closed, excepting at the lower part, where the silk hung out of the abdomen; the sutures were this day removed. From this time the patient mended daily, was quite free from pain, and on the 14th day he was completely cured, and continues well up to the present time. I endeavoured to pull the silk away, but in vain, and in six weeks after I cut away the portion which hung out of the wound, and left the remainder to its fate.

The physicians who have described this disease, vary as to its diagnostic marks. Some physicians state that volvulus or intus-susceptio can occur without constipation or pain. Haller also relates several cases where important intus-susception existed without constipation. Without wishing to underrate the value of such an authority, I must be allowed to state, that I believe complete intus-susceptio, on the other hand, cannot occur without constipation and pain; in very slight and imperfect intus-susceptio, these symptoms may certainly be absent, and such cases will scarcely require an operation, which is merely necessary in those of perfect intus-susceptio with obstinate constiveness that cannot be subdued by other means. Moreover the cases from Haller were only examined after death, and not seen by him in the living state, whereby it is possible that the pathological state was the last effort of nature, and took place *in articulo mortis*. In the foregoing case, ileus in combination with intus-susceptio was known by the following marks. 1. Periodical pains proceeding from one particular spot, and extending themselves over the whole abdominal region, and which were most severe in the part from which the first proceeded. In several kinds of colick also the pain is periodical, as in the pure colica spasmodica; but in this case, the known signs of spasm, which are present, are wanting in ileus *ab invaginatione*. 2. The spot from which the pain proceeded was like an induration within the integuments of the abdomen. This induration is the time

of the intus-susceptio, and can be most distinctly felt during a paroxysm of the pain, when it is more elevated, hardened, and sensible to the touch. The hardness arising from intus-susceptio can be easily distinguished from other indurations of the viscera, as of the liver, stomach, spleen, pancreas, partly by their situation, and partly by their chronic occurrence, and the disturbance which must have been previously excited in the functions of those parts. 3. The pains were exactly the same as in labour pains, the patient eagerly sought for some place so as to be able to bear down with greater power.

In opening the abdomen, I should recommend, when the indurated part is to be felt, as in this case on the right side, not to make the incision directly over the hardened spot, but in the linea alba; because then one can get at the intestines on each side better, and the commencement of the intus-susceptio will be more easily reached, in which case the opening of the intestine becomes unnecessary. Should the commencement of the intus-susceptio not be within reach, and it becomes necessary as in the present case to open the intestine, I should recommend the ligature to be cut off close to the intestine, in preference to letting it hang out of the wound, because it is impossible to remove it without pulling the intestine, and bringing the gut out of its situation. The healing of the wound also will be promoted by the plan I now recommend, because the thread is apt to excite heat, inflammation, and unnecessary discharge of matter. On the primary cause of this complaint there is a great deal of obscurity, but the proximate cause, according to my opinion, is a peristaltic action of an intestine or a part of an intestine in two opposite directions at the same time, so that the action is from above and below at the same instant, by which then one portion can be easily included in the other, the upper part extending itself whilst the lower is contracting. The remote causes may be very numerous, spasms, irritating substances in the abdomen, such as worms, &c. Whether worms, one of which was found at the beginning of the intus-susceptio, produced the complaint in this case, I will not venture to say; some physicians, however, lay stress on this point.—*Edin. Med. and Surg. Journal.*

Dr. Backer's *Pills.*

We have lately been trying Backer's pills in dropsy, and with considerable success. In one instance of long standing they reduced the swelling entirely, but the boy when we last saw him seemed still ill. In the other cases we have not trusted to them alone, but have previously directed blood-letting, or employed elaterium. There has appeared much difference in the operation of these pills; in one or two instances they have acted powerfully on the bowels, but in general they have only produced nausea; and under this the swellings have gradually subsided, without any augmentation of urine, at least beyond the natural quantity, and without any perceptible increase in any other of the excretions or secretions. We have suspected much difference in the preparation of the drug.—*London Med. Repository.*

Mr. Frost *on the Flowers of Colchicum.*

We have very frequent evidence how little medical botany is made an object of study or consideration at present, notwithstanding its great importance as a branch of the science of medicine; the consequence of which is, it often happens that the practitioner administers many vegeteble medicines without being in the least acquainted with the nature of them, but depending on the mere *ipse dixit* of some medicinal herbvender. But to return to the object of this communication, I would observe, that the flowers of colchicum autumnale will afford the profession a certain, uniform, and safe medicine, in those cases in which the use of colchicum is indicated, and that they do not produce those unpleasant effects which occasionally follow the use of the bulb. Another great advantage is, that the strength and properties of the preparations made from them are always uniform; for the collector cannot err in the time of selecting them, and their virtues cannot be readily impaired by the mode of conducting the processes for their preparation. My friend Dr. Pearson informed me, that he has found an infusion of the flowers prove useful in cases of chronic asthma. It would appear from a paper in a former Number of your Journal, that preparations of the flowers have been beneficial in several cases.—*Lon. Med. Rep.*